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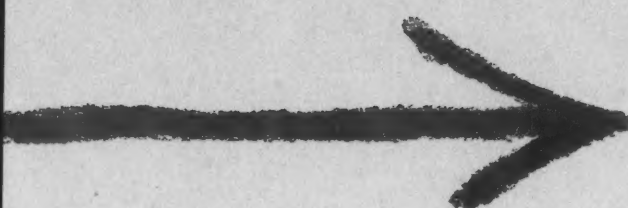
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CONTENTS

Editorial

The Growth of Gynecologic Endocrinology

A Personalized Retrospect..... EMIL NOVAK, M.D. 61

Reports

Statement on Retroental Fibroplasia with Reference to Oxygen Administration

LOUIS H. DOUGLASS, M.D. 65

Committee for the Study of Pelvic Cancer.....

BEVERLEY C. COMPTON, M.D. 67

Scientific Papers

Proctology in General Practice..... THURSTON R. ADAMS, M.D. 71

Hormones in General Practice..... HARRY F. KLINEFELTER, JR., M.D. 75

Orthopedics in General Practice..... RAYMOND E. LENHARD, M.D. 81

Electrolytes in Congestive Heart Failure..... ABRAHAM GENECIN, M.D. 84

Special Article

Cancer of the Lung..... O. C. BRANTIGAN, M.D. AND C. Y. HADIDIAN, M.D. 91

Component Medical Societies

Allegany-Garrett County Medical Society..... LESLIE E. DAUGHERTY, M.D. 98

Baltimore City Medical Society..... CONRAD ACTON, M.D. 98

Baltimore County Medical Association..... WILLIAM A. PILLSBURY, M.D. 99

Carroll County Medical Society..... WILLIAM L. STEWART, M.D. 99

Dorchester County Medical Society..... ALFRED R. MARYANOV, M.D. 99

Harford County Medical Society..... FREDERICK J. HATEM, M.D. 99

Montgomery County Medical Society..... DEWITT E. DELAWTER, M.D. 100

Prince George's County Medical Society..... BENJAMIN S. MILLER, M.D. 100

Necrology

..... A. S. CHALFANT, M.D. 102

Library

Obesity..... LOUIS KRAUSE, M.D. 104

Library Chatter..... MARY EMILY BERGE 105

Health Departments

State of Maryland Department of Health..... MARK V. ZIEGLER, M.D. 107

Monthly Communicable Disease Chart..... ROBERT H. RILEY, M.D. 108

Baltimore City Health Department

The Practice of Sanitation—Second Edition..... HUNTINGTON WILLIAMS, M.D. 107

Blue Cross—Blue Shield

The History of Blue Cross..... MR. R. H. DABNEY 110

Ancillary News

Proposed Changes in the Present Laws of Maryland Relating to Registration of Nurses and Licensed

Practical Nurses..... M. RUTH MOUBRAY, R.N. 111

Woman's Auxiliary to the Medical and Chirurgical Faculty..... MRS. JOHN G. BALL 113

Conference Report..... MRS. GERALD LEVAN 113

Coming Meetings..... 116

Annual Meeting Notices..... 64, 70, 118

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EDITORIAL

THE GROWTH OF GYNECOLOGIC ENDOCRINOLOGY—A PERSONALIZED RETROSPECT

EMIL NOVAK, M.D.*



Photograph by UDEL BROS.

EMIL NOVAK, M.D.

One of the youngest branches of medical science is endocrinology, and certainly one of its most fascinating chapters is that pertaining to reproductive endocrinology. The modernity of the latter is apparent when I say that its history dates back only to the beginning of the present century, so that it is a lot younger than many of the readers of

* Member of Editorial Board, MARYLAND STATE MEDICAL JOURNAL.

this editorial, as well as the writer thereof. When I was graduated from medical school in the early years of the century, the endocrinology of the menstrual cycle was exceedingly simple. We were taught merely that menstruation is due to the action of the internal secretion of the ovary, for the word hormone had not been invented. While some have ascribed the concept of hormones to Claude Bernard on the basis of his demonstration of the glycogenic function of the liver in 1850, this is incorrect. The storage and then the "internal secretion" of the liver's glycogen for nutritional purposes does not conform to the concept of chemical substances produced by one organ and bringing about specific effects upon distant organs.

As a matter of fact, though I am not certain of it, I believe that I was present, as were probably a few of my older Baltimore colleagues, on the occasion when the word hormone was used for the first time in America. One of the early Herter lectures at the Hopkins Medical School was delivered by Prof. E. H. Starling, the distinguished British physiologist, in about 1906, and it was devoted to the subject of the gastric hormone "secretin." I recall what a brilliant address it was, and what a whole new world was opened up by Prof. Starling's exposition of "chemical messengers" or "hormones." According to Sir Humphrey Rolleston (*Endocrine Organs and Disease, With an Historical Review*. Oxford University Press, London, 1936) Starling himself first used this term in his Croonian lectures at the Royal College of Physicians in June 1905. The actual coining of the word "hormone" is ascribed to William B. Hardy, in collaboration with his classical colleague at Cambridge, W. T. Vesey.

Since my own professional life has been devoted to gynecology, and since it has paralleled the development of gynecologic endocrinology from its very birth to the present day, I may lay claim to familiarity with the steps in rapid development since then, especially as I have had personal contacts and often close personal friendships with many of those responsible for the great discoveries in this field.

When we first began to talk about the ovary's internal secretion, the latter was thought of as a mysterious unknown principle, about as elusive as the life principle itself. No one knew where in the ovary it was produced or whether or not there was more than one principle. To take a long leap forward from that time we now know that we have at least two very tangible ovarian principles, we know which elements of the ovary produce them, we know their exact chemical and molecular structure, we can handle them in crystalline form, and we know a great deal about their pharmacologic effects, probably more than we know about many drugs which have been used for many years.

What has been said thus far pertains to the endocrinology of the ovary and not to ovarian endocrine therapy. Parenthetically, Rolleston credits an Italian, Pende, with the first employment of the word endocrinology (1909). As a matter of fact crude ovarian "extracts" were used as early as 1894 by Mainzer in the old Landau clinic in Berlin, which many of the preceding generation of gynecologists will remember if they followed the then popular fashion of going to Berlin for postgraduate work in that specialty. It is of interest that it was not until the very terminal few years of the nineteenth century that, as a result of the work of Knauer, Marshall and one or two others, the role of the ovary in the cycle was shown to be hormonal, but that even before this women began to be fed crude "extracts" of the ovary for conditions of supposed ovarian deficiency. The flimsy basis for this practice was the unjustified assumption of an analogy with the thyroid. Some years previously Gilbert Murray and others had shown the striking benefits of thyroid therapy in conditions of thyroid deficiency, and it was therefore thought that the feeding of ovarian substance should be equally effective in conditions of supposed ovarian deficiency. Thus began those wild joy-riding days of ovarian therapy, and millions

of women consumed billions of tablets or capsules of whole ovary, corpus luteum or ovarian residue, especially for menopausal symptoms. Though many reported good results, it was later shown, after the isolation of the ovarian hormones, that all these commercial preparations were completely or almost completely lacking in hormonal activity, a remarkable example of mass gullibility of both doctors and patients.

It would be interesting to trace the later history of endocrine therapy, now that we do have biologically active preparations which have at least a limited field of therapeutic applicability. The big problem of today is the failure to recognize these limitations, so that one of the greatest therapeutic abuses of the present day is the over-use of hormone products, especially of stilbestrol and other estrogens in the treatment of menopausal symptoms. This story is too long a one to embark upon here, and many of us have been inveighing against the abuse for many years. Moreover, it is not the story which forms the subject of this editorial, which is meant to comment on endocrinology rather than organotherapy.

The first important step in pin-pointing the source of the ovarian hormones was the classical contribution of Ludwig Fraenkel in 1903. This showed that the corpus luteum, previously considered a functionless end product of the follicle, is the source of a hormone which at least in the rabbits with which he worked, is absolutely necessary for nidation and the maintenance of gestation in its first third or so. Fraenkel was then the *Geheimrath* at Breslau, but he was later expelled by the Nazis, spending the latter part of his life in endocrine studies in Uruguay. He visited Baltimore as my house guest on two subsequent occasions, and I had the honor of contributing to the *Festschrift* which honored his 80th birthday, which he reached several years before his recent death. I mention these personal items not because of any vainglorious pride in my friendship with such great historical personalities, but simply to stress the fact that all the great advances in the new field of reproductive physiology have been made in our own time by our own contemporaries, most of them still active and scientifically productive, as I shall show with further examples.

Perhaps the next epochal milestone came in 1908, when Hitschmann and Adler established the cyclical menstrual histology of the endometrium. While Hitschmann died rather early, Adler also became a Nazi refugee from his Vienna home, and he has for many years been in active practice in New York City. To pursue this personal narrative, it was only a few years ago that I had the honor of delivering the address at the memorial service for Dr. Robert T. Frank at Mt. Sinai Hospital in New York. In 1917 he had published a short paper which he always claimed to have established his priority in discovering the "female sex hormone" or estrogen. However, the world has rather generally credited that great discovery in 1923, to two other men whom I also knew well. One of these, Edgar Allen, has since then died, but his collaborator, E. A. Doisy, is still the professor of pharmacology at St. Louis University. In the case of the other ovarian hormone, progesterone, our own Dr. George W. Corner, the director of the Carnegie Institute of Embryology, from which position he will unfortunately retire within the next few months, was the discoverer, with the collaboration of a young fellow who was then a student of his at the University of Rochester Medical School, my good friend, Willard S. Allen, Professor of Obstetrics and Gynecology at Washington University, St. Louis.

Of the other most outstanding discoverers in this field one will think at once of the establishment of the anterior pituitary gonadotrophes as the motivators of ovarian hormonal activity, and for this contribution we are indebted to two pairs of investigators three thousand miles apart, who in 1926 made this far-reaching discovery so nearly at the same time that no discussion of priority has ever arisen. In this country Smith and Engle

and in Germany Zondek and Ascheim share in the credit for this. The first two are still engaged in active teaching at Columbia, while the latter pair were separated during the Nazi twilight which descended upon Germany. Ascheim has been in Paris for many years, while Zondek, after a short stay in Sweden and then England, became the director of obstetrics and gynecology at the Hebrew University in Palestine. He has made several visits to our country, including a short stay with us in Baltimore some years ago. To him and Ascheim we are also chiefly indebted for our knowledge of the chorionic gonadotrophic principles in the urine of pregnant women and for the perfection of our first reliable biologic test of pregnancy, the Ascheim-Zondek test.

I have mentioned only a few of the outstanding personalities in the field of reproductive physiology, and I have resisted the temptation to say anything much about the application of their discoveries in the clinical and therapeutic field. As to the latter, I do not believe that any one can wax enthusiastic, however brilliant we may consider to be the advances in endocrinology. For example, in spite of all we have learned about the endocrine mechanism of the reproductive cycle, can any one be enthusiastic about the results of endocrine therapy of such common functional disorders as amenorrhea, dysmenorrhea, functional bleeding or sterility? I have no doubt that improvements will be noted from year to year, but even now the clinician who familiarizes himself with the fundamentals of reproductive endocrinology, not a difficult task, can interpret much more intelligently the innumerable functional problems encountered in the daily work of both the general practitioner and the specialist.

*26 East Preston Street
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Rooms have been set aside at the Sheraton Belvedere Hotel for members of the Medical and Chirurgical Faculty and their wives. The Hotel will take your room reservations now. When making your reservation, mention that you will be attending the Annual Meeting of the Faculty.

Reports

STATEMENT ON RETROLENTAL FIBROPLASIA WITH REFERENCE TO OXYGEN ADMINISTRATION*

LOUIS H. DOUGLASS, M.D., *Chairman*

The following statement was unanimously approved by the Committee members of the Pediatric and Obstetric Sections of the Committee on Maternal and Child Welfare of the Medical and Chirurgical Faculty.

The evidence continues to incriminate excessive oxygen administered over a prolonged period as the major cause of retrolental fibroplasia in premature infants. A review of recently published studies of this subject, abstracts of which are included at the end of this statement, has convinced the Committee that immediate action is required.

It is strongly urged that the following policies with respect to oxygen administration be adopted at once by all hospitals caring for newborn infants:

1. All babies under 1500 grams shall continue to receive routine oxygen for 24 hours, the concentration of which shall be kept between 30% and 40% as checked by measurement with an oxygen analyzer¹ every 8 hours. These infants shall be removed as soon thereafter as qualified nursing and medical estimates of the infant's status permits.
2. Oxygen shall be prescribed for individual infants by the physician on the basis of clinical symptoms, particularly cyanosis.

* Submitted by Committee on Maternal and Child Welfare.

¹ Until such time as an oxygen analyzer can be purchased, it is recommended that a flow of not more than 2 liters per minute be permitted in the Gordon-Armstrong type incubator and from 1-2 liters per minute in the Isolette. Complete instructions for the maintenance of oxygen concentration in the Isolette have recently been mailed by the manufacturer to all hospitals owning these incubators. These instructions should be kept in the nursery and followed closely. If you do not have a copy, write immediately to Air-Shields, Inc., Hatboro, Pennsylvania. The important recommendation on Isolettes concerns those bearing serial numbers below 3566. In these incubators the small "float" in the air oxygen intake assembly should be removed.

To remove float from air-oxygen intake assembly, unscrew

3. Under no circumstances shall oxygen be administered in concentrations exceeding 40%.
4. The actual concentration of oxygen during administration shall be checked by measurement with an oxygen analyzer¹ at least every 8 hours.
5. The continuous administration of oxygen for periods in excess of three days should be prescribed only in cases of real need. The indications for continued oxygen therapy should be re-evaluated by the physician daily. Where oxygen is administered for periods longer than three days, extreme caution should be exercised to measure the oxygen concentration to see that it does not exceed 40%.

Although the relationship between high concentration of oxygen and retrolental fibroplasia has been described in various papers in medical journals, there is an evident lag in application of this knowledge in the hospital nursery care of premature infants. The National Society for the Prevention of Blindness recently questioned a large number of well-known hospitals throughout the country and found that a considerable number of them had not yet taken definitive action to adjust their oxygen administration procedures to minimize the threat of visual damage.

A recent check reveals that the Maryland School for the Blind now has registered approximately 160 blind children of preschool age who are awaiting admission. Of these, 130 (80%) are due to retrolental fibroplasia. This is a matter of deep concern to the Committee and we believe it constitutes an emergency in preventive medicine.

The following abstracts with references compiled by the National Society for the Prevention of

oxygen intake nipple with a $\frac{3}{4}$ inch wrench. Remove float and replace the nipple. If the float does not drop out easily, it can be dislodged with the eraser end of a pencil or by tapping the assembly block.

With respect to oxygen analyzers the Committee finds that most of the Maryland experience has been with the Beckman instrument manufactured by Arnold & Beckman, Inc., 1020 Mission Street, South Pasadena, California. It is accurate and exceedingly simple to use. The cost is approximately two hundred and ten dollars.

Blindness should be studied with care—together with the papers themselves—by all physicians, chiefs of newborn nursery service, hospital administrators, and others responsible for the policies of newborn nurseries.

SELECTED REFERENCES CONCERNING ASSOCIATION OF HIGH OXYGEN ADMINISTRATION WITH OCCURRENCE OF RETROLENTAL FIBROPLASIA

Crosse and Evans (1) of Birmingham, England, reported occurrence of 6 cases of retrolental fibroplasia during period when there was much use of oxygen: no cases after oxygen administration was curtailed. K. Campbell (2) reported a similar observation in Melbourne, Australia.

Patz (3) reported that 7 cases of advanced irreversible RLF occurred among 28 infants receiving high oxygen—65 to 70 per cent, contrasted with no such cases among 31 infants of same weight group during same period who received low concentrations of oxygen.

Ashton et al. (4) found that retinal blood vessels of full-term kittens were in same stage of development as those of premature human infants, and found that high oxygen concentrations (60 to 80 per cent) obliterated developing blood vessels in the kitten, following which retinal hemorrhages sometimes occurred, and retinal detachment.

Patz et al. (5) produced ocular lesions closely resembling RLF in newborn kittens, puppies, rats and mice by placing them in 70 to 80 per cent oxygen concentrations: litter mates at room oxygen did not develop such lesions.

Gordon et al. (6) reported 10 per cent of 80 infants receiving unscrutinized moderate oxygen developed RLF membranes; later, 35 per cent of 20 infants on unscrutinized high oxygen had such membranes; during a transitional period, oxygen administration gradually was reduced and 21 per cent of 14 infants had RLF membranes; during the subsequent period, with oxygen concentrations kept below 40 per cent, only 2 per cent of 97 infants developed RLF membranes. Survival rates were not adversely affected by restriction of oxygen.

Locke (7) reported that 60 of 160 premature babies who received prolonged oxygen therapy at Lincoln and Presbyterian Hospitals developed acute lesions of RLF; in Montreal, 6 of 43 prematures on unrestricted oxygen developed RLF; later, only

minimal oxygen was given in Montreal hospitals with which Locke was connected and only 2 cases occurred among 124 infants.

Lanman et al. (8) reported on a controlled study at Bellevue Hospital where 36 infants received high oxygen (averaging 69 per cent) and 28 low oxygen (less than 40 per cent and then only for cyanosis). Eight of the infants in high oxygen developed cicatricial RLF; none of those in low oxygen developed the cicatricial stage.

Kinsey (9) gave a preliminary report on a cooperative study among 18 hospitals with randomized controls. All premature infants weighed less than 1500 grams and all were followed ophthalmologically for at least 3 months. Of 53 infants who received prolonged, high oxygen, 25 per cent developed cicatricial RLF; of 245 infants who were in the curtailed group, only 6 per cent showed cicatricial RLF. Most of the risk of developing RLF seemed to occur by exposures to high oxygen during the first week of life. There was no significant difference in mortality rates of the two groups of infants. A. B. Reese (9), chairman of the RLF panel, recommended that routine administration of oxygen to premature babies be discontinued, that it be given only if there be cyanosis or respiratory disease, that in such cases the concentration inside the incubator be kept below 40 per cent as measured by an oxygen analyzer, and that oxygen therapy be discontinued as soon as respiratory distress is relieved.

Gordon (10) has very recently summarized all the evidence to date in an editorial in "Pediatrics" and recommends a sensible and balanced view on action which should be taken.

1. CROSSE, V. M., AND EVANS, P. J., Prevention of Retrolental Fibroplasia. *Arch. Ophthalm.* **48**: 83, July 1952.
2. CAMPBELL, K. Intensive Oxygen Therapy as a Possible Cause of Retrolental Fibroplasia, *Med. J. Australia*, P. 48, July, 1951.
3. PATZ, A., HOECK, L. E., AND DE LA CRUZ, E., Studies on the Effect of High Oxygen Administration in Retrolental Fibroplasia. *Amer. J. Ophthalm.* **35**: 1248, Sept. 1952.
4. ASHTON, N., WARD, B., AND SERPELL, G., Role of Oxygen in the Genesis of Retrolental Fibroplasia—A Preliminary Report. *Brit. J. Ophthalm.* **37**: 513, Sept. 1953.
5. PATZ, A., EASTHAM, A., HIGGINBOTHAM, D. H., AND KLEH, T., Oxygen Studies in Retrolental Fibroplasia. II. The Production of the Microscopic Changes of RLF in Experimental Animals. *Amer. J. Ophthalm.* **36**: 1511, Nov. 1953.
6. GORDON, H. H., LUBCHENCO, L., AND HIX, I., Observa-

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7. LOCKE, J. C., Retroental Fibroplasia. Definitive Role of Oxygen Administration in Its Etiology. Arch. of Ophth. 51: 73, Jan. 1954.
 8. LANMAN, J. T., GUY, L. P., AND DANCIS, J., Retroental Fibroplasia and Oxygen Therapy. Jour. Amer. Med. Assn. 153: 223, May 15, 1954.
 9. KINSEY, V. E., AND REESE, A. B., ET AL., Symposium on Retroental Fibroplasia. Unpublished, annual meeting of Amer. Acad. of Ophth. and Otolaryn., New York, N. Y. Sept. 22, 1954.
 10. GORDON, H. H., Oxygen Administration and Retroental Fibroplasia, Editorial Comment, Pediatrics, November, 1954.

COMMITTEE FOR THE STUDY OF PELVIC CANCER*

BEVERLEY C. COMPTON, M.D., *Secretary*

The Committee for the Study of Pelvic Cancer meets on the third Thursday of each month, from 5-6 P.M., in the Small Hall of the Medical and Chirurgical Faculty Building. Selected cases are presented for discussion. All physicians are invited to attend these meetings.

Abstracts of Case Discussions:

I. N. E. White. Age: 43 years. Para 8, 1 miscarriage. September 1953, during the third month of pregnancy, patient began to have vaginal bleeding, which would last for two or three days and then stop for two or three days. She consulted doctor A during the fifth month of pregnancy. The patient says she was examined monthly thereafter. Because of continued bleeding, a Caesarian section was performed at eight months—February 1954. She went back to doctor A for several visits following hospitalization, and was requested to return for further treatment but did not return until June. Bleeding continued during this time. In June, the patient was hospitalized for D. & C. and biopsy. The diagnosis of carcinoma was made and the patient referred to second hospital for treatment. Admitted to this hospital in mid-July.

Diagnosis: Epidermoid carcinoma, cervix, transitional cell type, I. C., stage III.

Treatment: Deep x-ray therapy. Radium.

Chairman: In cases of bleeding during pregnancy, the first thought is usually of threatened abortion. Because of this, a patient is often not examined. Or,

* Under the auspices of the Medical and Chirurgical Faculty and the Maryland Division of the American Cancer Society.

if examined, there is hesitancy in doing a biopsy. Is there any one here who would care to say anything concerning this case?

Visiting physician: I believe this is my case although there are certain differences in my record and the history as given in the abstract.

Chairman: We understand that. This is the story as given by the patient.

Visiting physician: This patient was a gravida 10, para 8, 2 miscarriages. I would like to say first that the patient's second hospital admission was on July 4th. She was brought into the hospital at that time because she collapsed and lost consciousness. I did not see her until after her admission to the hospital and had not seen her at any time during the interval following her delivery in March and this second hospital admission in July. Although she had continued to have almost daily vaginal bleeding, she did not return for examination. On July 8th, the patient was given a transfusion of 500 c.c. of blood. On July 13th, a D. & C. was done. The cervix showed a hard-rimmed mass which was thought to be carcinoma, and the biopsy was positive. She received another transfusion and was then sent to Hopkins for treatment.

The patient did have bleeding off and on during pregnancy, but she had a hypertension and had large and extensive varicosities. I felt that the bleeding was explained on this basis. She was admitted to the hospital at the end of the eighth month. She had had considerable bleeding just before admission and the diagnosis at this time was placenta previa. This admission and the date of the Caesarian section was March 15th.

Chairman: She was admitted to the hospital then because of the diagnosis of placenta previa, rather than because of the continued intermittent bleeding during the pregnancy?

Visiting physician: Yes, that was the diagnosis and the reason for admission.

Committee member: Was the cervix ever looked at during the pregnancy?

Visiting physician: Yes, during the earlier part of the pregnancy, but there was nothing gross to be seen. The cervix was not examined after her delivery.

Chairman: She, of course, must have had the carcinoma during the pregnancy, considering the extent of the disease, a stage III, at the time she came to treatment.

Visiting physician: I think that is undoubtedly true.

Chairman: Hindsight is always better than foresight, and I think we all, including our guest, would agree that it would have been a good thing to have done a biopsy. The persistent irregular bleeding would seem an indication for this. There is a belief among some doctors that it is a mistake to biopsy a pregnant uterus, but I believe rather that it is a mistake not to do this. What has been the experience on the obstetrical service?

Staff member: We have done a good many biopsies without serious complications. We always have a cautery ready when we biopsy a pregnant uterus. I have had to cauterize, but I have never had to suture a cervix.

Chairman: This question of high blood pressure and irregular vaginal bleeding is one that has come up several times. There used to be a good deal in the literature concerning this, particularly in some British journals about the so-called "apoplexy of the endometrium." But I believe this has been pretty well discounted now. If hypertension is present, bleeding will be increased, but I do not believe that irregular bleeding can be explained on the basis of hypertension alone.

(There was further discussion of the indications for biopsy during pregnancy.)

II. D. B. White. Age: 30 years. Married. Para 6. About March 1954, patient developed pain in back, described as "bearing down pain and as if something was dropping out" of pelvis. She consulted doctor A in April—pelvic examination made—patient told that she had a "tipped womb" and a cyst, and that she should have an operation although this was not immediately urgent. Saw this physician only once. About this time, menses became more profuse and were prolonged to ten days. Late May, considerable vaginal discharge. She went to hospital clinic for examination on June 3rd. A Friedman's test was positive. A Papanicolaou smear was reported as showing "atypical cells, suspicious of tumor cells." Friedman's test was repeated one week later and cervix biopsied. The biopsy showed "carcinoma-in-situ with areas of infiltrating immature squamous carcinoma." Patient admitted to the hospital on June 27th.

Diagnosis: Squamous cell carcinoma, cervix, I. C., stage I (complicated by pregnancy, 8-10 weeks).

Treatment: Deep x-ray therapy (patient aborted, as was expected). Radium following completion of x-ray therapy.

Chairman: First, I would like to say that I do not feel there was any delay on the part of doctor A.

The patient was apparently having symptoms of bearing-down pain from a displaced uterus, and had no other real symptoms at the time of consultation. The case is an interesting one and fortunately the diagnosis was made while the lesion was still early.

Visiting surgeon: This girl was first seen in out clinic on June 3rd. The smear was reported as, "Atypical cells, suspicious of tumor cells. Please repeat and do a biopsy." On June 10th, a smear stained by the Papanicolaou technique was reported as, "Group 4." The biopsy was as given in the abstract, showing areas of infiltrating immature squamous cell carcinoma. She was eight to ten weeks pregnant. She was admitted to the hospital on June 27th, and then an intra-hospital misunderstanding took place as to whether the patient should have radium or x-ray first. We discussed the matter at our Cancer Conference and it was decided to use x-ray first.

Chairman: Why x-ray first?

Visiting surgeon: Because of the complication of the pregnancy. We consulted eight authorities. Two advocated radium first; three, x-ray first; three others were indefinite because the series of cases studied was not large enough to be conclusive. We decided to give the x-ray first. It was felt that the patient would undoubtedly abort during the course of the x-ray, and that a more satisfactory application of radium could be obtained following this. But the x-ray men did not want to go along with this. They thought it was a poor idea. We held another meeting and discussed the problem. We decided that it was our case and that the decision as to how it should be treated was, after all, ours. The x-ray was started on July 13th. The patient aborted on August 15th. She had radium on September the 21st. The cervix at this time looked perfectly clean.

Of course, one of the reasons for deciding to use x-ray first, was the fact that the patient was only eight to ten weeks pregnant. For a more advanced pregnancy this would not have been the treatment. We have another case under treatment now where the patient was five months pregnant. This patient has had a hysterotomy and is to have radium followed by deep x-ray therapy.

Committee member: We are now treating a patient who is about twenty weeks pregnant. We gave this patient the usual routine radium and if she does not abort we will do a hysterotomy. The usual procedure

in our clinic is to go ahead as if the patient is not pregnant and then take care of the pregnancy later. My feeling is that early carcinoma does better with radium first and that it is better not to delay the radium. Some cases "get away from us" during x-ray therapy.

(There was further discussion of the treatment of carcinoma of the cervix complicated by pregnancy.)

III. P. H. White. Age: 49 years. Married. Para 2. Periods said to be regular and normal to about April 1953. Period at that time profuse with many clots. Slight bleeding for one or two days a month or so later. Following this, slight bleeding or spotting every two to three months. Late January, 1954, patient consulted doctor A in regard to recurrent bleeding—was not examined—told that she was having the menopause. Beginning in early April, vaginal bleeding almost daily with passage of clots and brief episodes of profuse bleeding. She delayed consulting a physician because her regular physician was out of town. About May 15th, consulted doctor B—was immediately referred to doctor C and hospitalized for D. & C. and biopsy. Following diagnosis the patient was referred to second hospital for treatment.

Diagnosis: Squamous cell carcinoma of the cervix, I. C., State II.

Treatment: Radium and deep x-ray therapy.

Chairman: There was obviously some patient delay in this case. The patient had irregular bleeding beginning in April 1953. She consulted a physician in January of 1954. She was not examined and told that she was in the menopause. Then there was more delay before further consultation. It would appear that there was both patient and physician delay in this case. Is there anyone who has any further information regarding this patient?

Visiting physician: I first saw this patient on May 13th, 1954. She was complaining of profuse vaginal bleeding. She told me that she had consulted another physician who told her that she was in the menopause. Actually I do only general medicine and advised the patient that she should see a gynecologist, but she was so insistent that I examine her that I did do a pelvic. I found a proliferative lesion of the cervix which bled profusely when touched with the speculum. She was immediately referred to a gynecologist and was admitted to the hospital for a D. & C. and biopsy on May 20th.

Chairman: This is a story we hear often. The patient is assured that she is in the menopause but is not examined until she herself becomes worried by continuing or increasing symptoms and seeks fur-

ther consultation. Following examination this patient was diagnosed and treated very promptly.

Committee member: This patient was first seen in our clinic on June the 7th. She has had radium and a full course of deep x-ray therapy. She had a good post-irradiation result. A recent biopsy was negative. It looks as if we have a good result.

Chairman: We are sorry we have no further information from doctor A. Although doctor C was unable to be here today, we have received a full report from him.

IV. C. N. White. Age: 36 years. Married. Para 2, 1 miscarriage. The patient had a miscarriage in May of 1953. A D. & C. was done at this time. She continued to have some intermenstrual spotting and remained under care of doctor A until December 1953—treated with vaginal suppositories. Consulted doctor B in February of 1954. Pelvic examination made and the patient followed until May when she was referred to doctor C for further examination. A biopsy was taken and the patient hospitalized for treatment.

Diagnosis: Carcinoma of the cervix, I. C., stage I.

Treatment: Radium. Deep x-ray therapy.

Chairman: Is there anyone who has further information concerning this case?

Visiting surgeon: This is my case. Incidentally, the patient had more than radiation. She had a total hysterectomy following radiation. Otherwise the history is substantially as given in the abstract. The patient was referred to me the latter part of May. Following positive biopsy she was admitted to the hospital and had radium application on May 31st. Following radiation, both the physician who had radiated the patient, and I, thought that the uterus was small and perfectly free and it was decided to do a total radical hysterectomy. At the time of operation the bladder was opened inadvertently and it was necessary to do a partial resection. The pathology showed involvement of the bladder. It was felt that the area of the bladder involved in the carcinoma was completely removed. A node in the right parametrical area proved to be inflammatory.

Chairman: Is this your routine procedure—to do a Wertheim following radiation?

Visiting surgeon: I try to select the cases very carefully, but if the uterus is perfectly free, I do like to do a Wertheim following radiation.

Visiting surgeon: Have you found carcinoma in the specimens removed? In many cases?

Visiting surgeon: Yes, in some cases. The total number of cases is small.

Committee member: In this particular case the carcinoma was much more advanced than anticipated?

Visiting surgeon: Yes, the involvement of the bladder made it a pathological IV. We are wondering if the case should be signed out on the clinical or the pathological staging.

Chairman: We are going on the clinical staging. I think the understanding is that once a staging is made it should not be changed.

Visiting surgeon: In the case under discussion, could you have detected the bladder involvement if the patient had been cystoscoped?

Visiting surgeon: No, this was done and the carcinoma was not detected.

Chairman: This question of radiation plus surgery versus radiation alone, is one that we have discussed several times. Certainly the surgery is more difficult after the use of radium. Gordon Douglas of Cornell reports in his study that the incidence of urinary tract injuries is much higher in surgery following the use of radium. This is, of course, because of cutting down the blood supply to the ureter by radiation

and then further stripping the ureter of its blood supply by the lymph gland dissection.

Committee member: Our five-year salvage in stage I is now practically 80 per cent, using radiation alone. We use surgery only if the tumor proves to be radio-resistant. We probably don't do more than half a dozen Wertheims a year.

Chairman: I have not been able to find any studies where the five-year results are better with the routine use of radium plus surgery rather than with radiation alone, but I would be most interested in knowing about any such study.

(There was further discussion of surgery following radiation.)

Statistics

Cases to December 1, 1954..... 811

Classification:

Patient Delay.....	366
Physician Delay.....	68
Physician and Patient Delay.....	44
Institutional Delay.....	25
Physician and Institutional Delay.....	4
Patient and Institutional Delay.....	15
Patient, Physician and Institutional Delay.....	2
No Delay.....	266
Asymptomatic Detected Cases.....	21

ANNUAL MEETING

Thursday, Friday, and Saturday

APRIL 21, 22 and 23, 1955

Business Meetings will be held on Thursday, Friday and Saturday mornings, at the Deutsches Haus, 1212 Cathedral Street, Baltimore.

Scientific Sessions—Friday morning, and Thursday and Friday afternoons in Osler Hall, 1211 Cathedral Street, Baltimore.

Presidential Address and Trimble Lecture will follow the Presidential Dinner at the Sheraton Belvedere Hotel on Thursday evening.

CPC—Saturday morning, Osler Hall, 1211 Cathedral Street, Baltimore.

Scientific Papers

PROCTOLOGY IN GENERAL PRACTICE¹

THURSTON R. ADAMS, M.D.²

In anorectal disease, history-taking is just as important as in any other field of medicine. It is not necessary to take a long history, as a rule, to find out approximately what is happening to the patient. A great majority of patients coming to the doctor's office suffering from anorectal conditions complain of one of the following: (1) pain, (2) bleeding, (3) discharge, or a combination of these. Many doctors fail to differentiate between anal troubles and rectal troubles. As a general rule, such patients will say that they have rectal trouble when actually pain is much more likely to occur in the anal area than in the rectal area.

Certain characteristics of the patient's pain may be of great significance in making a diagnosis. A throbbing pain that increases in intensity, especially if associated with fever, should mean abscess formation, and intermittent pain associated with defecation and which quiets down promptly after defecation is likely to mean fissure-in-ano. A sudden, acute pain followed by a swelling or lumps in the anal region is more likely to be due to an external thrombotic hemorrhoid. Cramp-like pain in the lower abdomen which may extend down into the rectum, particularly if associated with frequent loose bowel movements is much more apt to be associated with some inflammatory condition involving the mucous membrane of the colon and rectum.

It is especially important to inquire into the bowel habits of the patient. It should be remembered that certain patients have two to three bowel movements a day, which is normal

for them. Others may have one stool every other day, which can certainly be normal. It is important to find out if there has been any change in bowel habits—whether there have been any periods of constipation followed by diarrhea. It is wise to inquire whether or not there has been blood in the stools—whether or not the blood is mixed with the stool or whether it is passed as a blood clot, or whether or not the stools have been tarry in color. These points may lead one to suspect the location of the trouble. As a general rule, bleeding that is bright red occurs low in the bowel, and tarry stools will mean bleeding from higher up in the gastrointestinal tract rather than in the rectum or anus.

The examination of a patient with anorectal complaints requires that the patient be in a proper position so that the anal area may be inspected. It is not necessary that you have an elaborate proctoscopic table in order to do a satisfactory examination. Any sturdy examination table is all that is required in order to do an adequate anorectal examination. If the patient is placed on the table in a knee-chest position, it will be found that a satisfactory examination can be accomplished. Inspection of the anal area is quite important. There are many possibilities to be considered. Palpation around the anal outlet should disclose any tenderness, swelling, or edema that may be present if a perirectal or ischiorectal abscess is the cause of the trouble. The skin may be discolored over the swollen area, and if the patient gives a history of a throbbing pain that is slowly increasing in intensity, an abscess should be excluded. If inspection reveals a blue-domed cystic swelling

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about the junction of the skin and mucous membrane along with a history of sudden, sharp pain followed by exquisite tenderness in this area the diagnosis is likely to be an external thrombotic hemorrhoid.

An external thrombotic hemorrhoid is best treated by injecting Procaine into the skin directly over it, then incising the area and evacuating the clot. This should be followed by hot sitz baths. Relief is prompt and very gratifying to the patient. Fistulae-in-ano may show up on inspection as either single or multiple openings at any point about the circumference of the anus. As a general rule, the fistulae that follow a pyogenic infection will have a single opening from which a purulent material usually exudes. Bleeding is uncommon from a fistula-in-ano unless it is traumatized by the insertion of a probe. Pain is not a common finding if drainage is adequate. Any fistula-in-ano that has multiple openings should arouse your suspicions of a diagnosis of tuberculosis.

Tubercular fistulous openings are, as a rule, multiple. They appear punched-out, have little or no inflammatory reaction around them, and drain a serous, grayish-colored material. In the presence of this type of fistula, further studies should certainly be carried out in order to find the source of the tuberculous infection. The treatment of the tuberculosis should be supportive in character, followed later by excision of the fistulous tract.

Anal warts are condylomata acuminata arising from anal and perianal skin. These lesions are cauliflower-like growths which vary in size from tiny lesions to a polypoid mass several centimeters in diameter. They are nonmalignant. Such patients complain of a foul-smelling discharge which is watery in consistency. There is considerable anal itching. As a rule, they present no difficulty in diagnosis; however, other lesions that should be considered are anal epithelioma and condylomata lata which are a manifestation of secondary syphilis. The treatment of condylomata acuminata is fairly simple. The local applications of a twenty-five per cent suspen-

sion of podophyllin in mineral oil will usually relieve the condition. It may be necessary to apply podophyllin at weekly intervals for two or three applications. Between applications the use of hot sitz baths is advisable. If the podophyllin does not relieve the condition, then surgical excision or fulguration will, as a rule, eliminate the condyloma.

Another lesion that is quite painful, particularly on defecation, that can be seen on inspection if the buttocks are spread apart, is a fissure-in-ano. A fissure is an ulcer or a break in the tissues at the mucocutaneous junction. It is due either to an infection which extends down from one of the crypts or to trauma during defecation. It is very painful at the time of defecation. The pain slowly subsides a few minutes after defecation. It rarely bleeds profusely, but a small amount of bleeding is common. Most of the patients will tell you that they notice blood on the toilet paper after cleansing. Early fissures that do not have considerable scar tissue about them, or those that the healing process has not stimulated the formation of a sentinel pile, can be treated satisfactorily by the use of hot sitz baths, the application of silver nitrate to the base of the ulcer, along with the use of mineral oil to keep the stools soft to avoid mechanical stretching of the area. However, the long-standing fissures which on examination show scar tissue formation, and those in which the fibers of the sphincter muscle can be seen at the base of the ulcer, will require more extensive treatment. As a general rule, this group will have to be excised before a cure can be anticipated.

An epithelioma is occasionally seen about the anal orifice. It appears as a red, raised, granular-looking lesion. It is sometimes difficult to differentiate between an epithelioma and a tubercular granuloma. This is best done by biopsy.

Internal hemorrhoids occasionally protrude through the anal orifice. They may or may not be ulcerated, infected or thrombosed. It is important to reduce them and to examine for the possibility of a co-existing lesion. It is certainly

my feeling that protruding internal hemorrhoids which bleed, are best treated by excision; however, hot sitz baths, astringent ointments, and suppositories will give some relief. Occasionally, internal hemorrhoids protrude sufficiently to cause prolapse of the remainder of the anal mucous membrane. Usually, the protrusion will amount to no more than a few centimeters of mucous membrane. This protrusion, of course, should be reduced promptly. I believe it is best to have these patients operated upon for removal of their hemorrhoids which will, as a rule, cure both the hemorrhoids and the prolapse of the rectal mucous membrane.

In children, you will occasionally see a prolapse of the rectal mucous membrane. Usually the prolapse is only a few centimeters. The immediate treatment is reduction of the prolapse. Strapping the buttocks for a time may be of some value. In my experience it has been necessary to carry out more adequate treatment in order to cure these patients. Van Buren described a procedure which amounts to cauterization of the prolapsed mucous membrane in three to five radial lines, then reduction of the prolapse. This treatment depends upon the occurrence of considerable fibrosis. This procedure used alone has not been successful in my experience. It becomes effective if a purse string suture of catgut is put around the anal opening under the skin and tied over the index finger which is inserted into the anal canal. This prevents the mucous membrane from prolapsing while fibrosis is taking place. This treatment has been quite satisfactory, however, it is definitely not an office procedure. It requires anesthesia and general hospital care.

There is no condition that causes the doctor or proctologist more grief than the patient who comes in and says, "Doctor, I have a terrible itching around my anus." This is such a severe problem with some patients that they become emotionally upset. This, I am sure, increases their symptoms. Inspection examination reveals a grayish-white discoloration about the anal outlet. It sometimes extends three to four centi-

meters away from the anal opening. In this area there are usually breaks in the mucous membrane and skin which may or may not be evidence of local irritation from scratching. Usually the area is moist. It weeps enough to soil one's clothing. A thorough anorectal examination is in order in these cases.

Any abnormality, such as cryptitis, local infections, hemorrhoids, fistulae-in-ano, or fissures should be eradicated because occasionally any one of them may be the exciting factor of the pruritus. I am sure that in a certain number of these cases some psychiatric help is requisite. Some relief may be anticipated from the use of hot sitz baths and some form of powder to absorb moisture. Bismuth formic iodide powder has often been helpful. Most of these patients will have tried various and sundry ointments, some of which may have made them worse. Many ointments contain ingredients that are irritating or to which the patient has developed a sensitivity. If any ointment is to be used, carbolated vaseline is as efficacious as any. If no cause can be found and local treatment has not sufficed, then injection of alcohol beneath the area will, in certain instances, give relief. This treatment, of course, will require some anesthetic agent. Tattooing has been recommended for anal pruritus. The author has had no experience with it.

Inspection of the sacrococcygeal region is always in order, being on the lookout for a pilonidal sinus. It will usually appear as one or more dimples or minute openings in the midline. If infected, it should be incised and drained. If further trouble develops, then excision is the treatment of choice. The above summarizes the main anorectal problems that can be seen on inspection of the anal area.

In the diagnosis of anorectal conditions a digital examination should be made. One should be on the lookout for any increase or decrease in the sphincter muscle tone. Increased tone in the sphincter muscle is seen in any painful condition at the anal outlet, particularly in fissure-in-ano. A relaxed anal sphincter may mean that

there is involvement by malignancy, or just general debility. In performing the digital examination, one is not apt to feel internal hemorrhoids unless they are complicated by infection, edema, or thrombosis. One should be observant of any tumor mass, remembering that probably one-half of tumors that occur in the colon can be palpated with the index finger. Occasionally hypertrophied papillae will be palpated as small, firm projections from the anal wall. These usually denote infection in the anal canal. In examining the male, it is the usual practice to palpate the prostate gland, getting some idea as to its consistency and size. Any hard, firm nodules felt in the prostate should make one suspicious of malignancy and demand referral of the patient to a genito-urinary surgeon for further investigation.

Coccydinia is another condition that occasionally brings patients to a doctor. Such patients complain of a great deal of pain in the region of the coccyx. External examination reveals very little. Movement of the coccyx is usually painful, and on digital examination, when the coccyx is moved, a good deal of pain is experienced. This is a difficult problem to treat; however, some measure of success has been obtained with forceful manipulation of the coccyx. It is well worth trying.

The next step in examination should be an anoscopic examination. This is best done by the use of an anoscope. A Hirschman anoscope is easily used and is quite satisfactory for visualizing any condition in the anal canal. At times, a portion of the rectum can be visualized with this simple instrument. With it, hemorrhoids, hypertrophied papillae, cryptitis, and polyps occurring in this area, or any tumor mass, benign or malignant, can be visualized.

By the use of a proctoscope or sigmoidoscope any lesion can be seen, often treated, biopsied, or at least a working diagnosis can be made, for the length of the rectum and colon that one is able to introduce the scope. It should be remembered that biopsy of a lesion from the rec-

tum or colon through a sigmoidoscope is not without some danger. It is possible to bite a hole through the bowel with the biopsy forceps. Occasionally, excessive bleeding will occur following biopsy. A biopsy specimen may be misleading in that a specimen may be taken from the edge of the lesion and not reveal the true diagnosis. For the lower twenty to twenty-five centimeters of the bowel and rectum, a proctoscope or a sigmoidoscope is decidedly more advantageous and gives more specific information than a barium enema. If, after the above examinations the cause of the patient's complaint has not been found, then he should have the benefit of x-ray studies.

It is important to remember that bleeding from the anal outlet can come from many causes. It is unfortunate that too many people, doctors included, assume that bleeding from the anorectal outlet is coming from hemorrhoids without establishing specific identification. It behooves the doctor to find the source of bleeding, constipation, or diarrhea, or whatever the patient's complaint may be. At times this will require exhaustive studies which can only be done with trained laboratory personnel. We are all aware that after the most exhaustive studies, no cause for bleeding has been found in certain cases. If symptoms recur, all diagnostic studies should be repeated in an attempt to find the cause.

One of the best treatments for any discomfort in the anal region is the use of hot sitz baths. They are particularly valuable when there is infection or itching present. They are especially good following operative procedures in this area. They are much more soothing from the patient's point of view than any local medication that you may apply. There is no anal condition, except possibly a postoperative pilonidal sinus in which the wound has been closed anticipating healing per primam, that hot sitz baths are contraindicated. Advise it often. Your patients will be grateful for the relief that they experience.

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HORMONES IN GENERAL PRACTICE*

HARRY F. KLINEFELTER, JR., M.D.

During the last few decades, great progress has been made in endocrinology; new knowledge about hormones is constantly being obtained and advances in this field of medicine are probably more rapid than in any other.

The practicing physician becomes confused by statements in brochures even though the intentions of the pharmaceutical houses are good. His patients frequently read articles in lay publications about the magical effect of some hormone, and considerable pressure is often put on the physician to use these substances when it may be preferable to use other forms of therapy.

Hormones can usually be prescribed by their chemical rather than by their trade names. Hormone preparations are either standardized or purified and there is no need to order them by the name given by the manufacturers. A few preparations, however, are known only by trade marks, and must be prescribed by these names.

Hormones play an important role in maintaining homeostasis in the body, but their exact mode of action is still not clearly understood. In general, these substances have two broad types of action: (1). physiological (replacement) and (2). pharmacological (suppressive or inhibitory). When administered for physiological effect, the dose is smaller and complications uncommon. When used for pharmacological effect, the dose is larger and complications are more apt to occur.

In this discussion, little attempt is made to discuss the physiology and interrelationships of the glands of internal secretion. The hormones that are commonly used are discussed from the point of view of the physician in general practice. The symbol® indicates the trade or registered name for a preparation.

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ANTERIOR PITUITARY HORMONES

All these are proteins and are potentially antigenic. They have not been chemically identified or synthesized and are not effective unless administered by injection. Adrenocorticotrophic hormone (ACTH) is the only one that is used in practice. It is obtained from the pituitaries of various animals and its administration has seldom been followed by antibody formation.

ACTH is used entirely for its pharmacological or suppressive action. Highly purified ACTH in a gelatin base, HP Corticotropin gel, is the most useful preparation. It can be administered either subcutaneously or intramuscularly and its action lasts for twelve to twenty-four hours. The details concerning the use of both ACTH and cortisone were covered in a recent symposium published in this journal.

ACTH does not cure any disease. It dramatically shortens the course of many acute diseases, however. In those chronic diseases in which it is effective, it should be used only after other methods of treatment have failed or when the patient's life is in danger. The availability of a preparation that is effective subcutaneously reduces the cost of treatment since the patients can be taught to give themselves the hormone. If an insulin syringe is used, it is easy to taper the hormone slowly at regular intervals. In contrast to cortisone there is little danger of adrenal failure and less risk of osteoporosis.

The initial dose should be from 40 to 80 Units, once daily. As soon as the disease state has been suppressed, the drug can be stopped in the acute self-limited diseases. It should be tapered, at first rapidly and later more slowly, in chronic diseases. As long as the patient is receiving more than 10 Units per day, dietary salt should be restricted to 4 grams daily and the diet should be supplemented with 3.0 gms. of potassium chloride a day.

ANTERIOR PITUITARY-LIKE HORMONE

Chorionic gonadotropin (APL) is also a protein but has little antigenicity since it is obtained from human pregnancy urine. It must be given intramuscularly and closely resembles in its action the interstitial cell stimulating hormone (ICSH) of the anterior pituitary. It stimulates the interstitial cells of the testis but has no consistent effect on the ovary. It has no place in the therapeutic armamentarium of the general practitioner.

Although it has been widely recommended and used in the treatment of bilateral undescended testes, it is now generally felt that this condition should be treated surgically by the urologist. The rare patient with hypogonadism of pituitary origin may respond to massive doses of APL. This condition cannot be differentiated from delayed puberty until the age of twenty-one, however, and the diagnosis should be confirmed in a medical center by proper endocrine assays.

POSTERIOR PITUITARY HORMONES

None of these have been isolated but three separate fractions probably are present. Only the antidiuretic and oxytocic factors are employed clinically today. These hormones are proteins and are not effective unless administered parenterally.

The antidiuretic hormone, Pitressin, is the specific treatment for diabetes insipidus. Pitressin (20 Units per cc.), Pitressin Tannate in Oil (5 Units per cc.), or Posterior Pituitary Powder (U.S.P.) can be used. The latter is the least expensive and most convenient, if the patient's nasal mucosa can tolerate it. A De Vilbiss #44 atomizer is used, and one insufflation through each nostril three or four times a day controls the symptoms of most patients. This is equivalent to 30 or 40 mgms. of powder (15 or 20 Units), each jet delivering about 0.5 mgm. of powder. Pitressin is given intramuscularly in doses of 0.25 to 1.0 cc. every four to eight hours and is useful in confirming the diagnosis in doubtful cases when alternated with injections of normal saline.

Pitressin Tannate in Oil may be used later for maintenance, and the initial dose should never exceed 1 cc. (5 Units). It is slowly absorbed, and its effect may last one to two days. The ampule should be warmed in the hand and shaken vigorously to assure even suspension and action.

Pitocin is the oxytocic hormone and 1 cc. (10 Units) given immediately after delivery of the fetus expedites delivery of the placenta. Pitocin may also be given slowly intravenously, 0.5 cc. in 500 cc. of 5 per cent glucose, for uterine inertia. The oxytocic hormone should never be used to induce labor in a primigravida.

PARATHYROID HORMONE

This is a relatively impure preparation that is painful when injected and rapidly results in anti-hormone formation. It has no use in practice. Acute hypoparathyroid tetany should be treated with intravenous calcium gluconate and the chronic state with Vitamin D and Calcium Lactate by mouth. Vitamin D, 100,000 to 150,000 Units daily, will raise the serum calcium in a few weeks; the patient must be carefully followed to avoid hypercalcemia, however. The maintenance requirement of Vitamin D varies greatly and the oral administration of 4 gms. of Calcium Lactate three or four times a day may decrease it significantly.

THYROID HORMONE

Thyroid (U.S.P.) provides a reliable and inexpensive source of thyroid hormone. It is effective by mouth, well tolerated, and relatively harmless. When given to a euthyroid patient, it suppresses secretion of the patient's own thyroid, but does no harm unless given in doses greater than 192 mgms. a day. After it has been stopped, the patient's thyroid resumes its normal function after a period of one to two months.

Thyroid should not be given unless there is evidence of hypothyroidism. The hormone is still prescribed each year in large quantities for many conditions in which it has no beneficial effect. Among these are obesity, mental retardation of

all types, low blood pressure, easy fatigue, lack of energy, menstrual disturbances and the presence of a low basal metabolic rate.

Hypothyroidism can usually be detected by a good history and physical examination, without resorting to laboratory tests. Indeed, the clinical findings are often more reliable than the basal metabolic rate which may be within normal limits, especially in hypothyroid children. The response to thyroid in such individuals is most gratifying. To be on the safe side, it is best to begin treatment with 32 mgms. ($\frac{1}{2}$ grain) a day, to avoid the unfortunate complications that occasionally occur in patients with masked hypopituitarism or coronary artery disease. After three weeks, the dose may be increased to 64 mgms. daily and changed at monthly intervals until the optimum dose for that individual is determined. A hypothyroid patient never requires more than 192 mgms. daily.

There are some patients in whom it is difficult to decide whether thyroid function is deficient or not. Without resorting to elaborate laboratory tests, it is safe to give a therapeutic trial of 64 mgms. daily for one month. There will be a definite response in the hypothyroid patient on this small dose. If there is no response, the hormone should be stopped and not increased.

There are a few women with irregular periods and a few others who habitually abort who respond to thyroid. After a trial period of 64 mgms. a day for three months or one pregnancy has failed, other causes should be investigated.

Finally, thyroid has a cumulative action and the entire daily dose should be given at one time. It is an unnecessary chore for the patient to take the hormone in divided doses. It follows that the patient who feels worse a few hours after omitting the usual dose of thyroid probably does not need thyroid at all.

INSULIN

This hormone should be used in general practice only for the treatment of diabetes mellitus. It is effective only when given by injection. Although insulin is useful pharmacologically in

treating psychiatric patients, it has little value in stimulating appetite and weight gain in underweight but otherwise normal people.

Crystalline (regular) insulin must sometimes be used alone to regulate severe juvenile or "brittle" diabetics. More insulin will be needed before breakfast than before subsequent meals, because sugar tolerance increases during the day in both diabetic and normal people. If a brittle diabetic requires 80 Units a day, he will be better regulated with 40-20-15-5 fractions than with a division of 20-20-20-20.

Protamine zinc and NPH insulins are the long-acting types most commonly used. These insulins have a sustained action over the twenty-four hours, and a night feeding should always be given to avoid early morning hypoglycemia. The diet should be divided $\frac{3}{4}$, $\frac{3}{4}$, $\frac{3}{4}$, and $\frac{1}{4}$ at night or $\frac{3}{8}$, $\frac{3}{8}$, $\frac{3}{8}$, and $\frac{1}{8}$ at night. The bed-time feeding should consist of cheese, meat or milk with bread and butter. Severe diabetics on protamine zinc usually require some crystalline insulin before breakfast to avoid excessive hyperglycemia before lunch. NPH insulin resembles a 2:1 mixture of protamine zinc and regular insulins, and many severe diabetics can be controlled with this alone. Should mid-afternoon hypoglycemia occur in patients on NPH insulin, a small feeding at 3 or 4 p.m. is required. The diet could then be divided $\frac{3}{9}$, $\frac{3}{9}$, $\frac{2}{9}$, $\frac{1}{9}$, with $\frac{1}{9}$ in the afternoon.

Insulin should not be given to obese diabetics if they remain free of acidosis on a high protein, low calorie diet. Obese diabetics will lose weight much more readily if insulin is withheld, and their sugar tolerance usually improves as they lose weight.

ADRENAL CORTICAL HORMONES

There are three different groups of hormones produced by the adrenal cortex: one influencing electrolyte metabolism, another influencing carbohydrate metabolism and a third influencing protein metabolism. Only the first two groups are used in practice.

Desoxycorticosterone acetate (DOCA) corrects the disturbances in sodium, chloride, potas-

sium and water excretion that occur in adrenal insufficiency. The recent isolated aldosterone (electrocortin) is twenty-five times as potent as DOCA but not yet available. Addison's Disease is usually not difficult to diagnose; pigmentation not previously present, hypotension with postural aggravation, asthenia and weight loss are the cardinal symptoms. DOCA can be given subcutaneously, intramuscularly, by the buccal route, or by pellet, but not orally. The daily requirement is from 1 to 5 mgms., and after the maintenance dose is determined, pellets may be implanted or long-acting desoxycorticosterone trimethylacetate can be given intramuscularly. The latter is most satisfactory and 25 mgms. for each mgm. of DOCA required daily is given every thirty days.

Whereas Addison's Disease is uncommon, suspected adrenal insufficiency is common. Without resorting to laboratory tests, a therapeutic trial of 5 mgms. of DOCA in oil daily for ten days will objectively improve patients with adrenal insufficiency, and have no such effect in other individuals. Desoxycorticosterone has no pharmacological use and should not be used for other types of asthenia, low blood pressure and rheumatoid arthritis.

Cortisone and hydrocortisone have similar effects on carbohydrate metabolism and both are effective orally. They are both rapidly absorbed and utilized and must be given every six to twelve hours. While effective intramuscularly, they are slowly absorbed and it is preferable to give them orally whenever possible. Hydrocortisone is about 30 per cent more potent than cortisone; but it is also more expensive, and the side effects are the same. Both hormones have marked anti-inflammatory or suppressive action and are used in the same conditions in which ACTH is effective. The danger of adrenal cortical atrophy after long continued administration of either hormone is great, and they should never be stopped abruptly, but gradually reduced. If the patient is subjected to severe stress, the daily dose should be doubled. Intramuscular cortisone may be necessary, and the physician must re-

member that the peak of action of intramuscular cortisone is not reached for twelve to eighteen hours after injection.

Hydrocortisone acetate is effective intra-synovially or intramuscularly, but not by mouth. It has a marked anti-inflammatory effect in various types of arthritis, but is generally used in patients who have a single or only a few persistently incapacitating joints.

Cortisone is used physiologically in treating adrenal insufficiency. Ten to 37.5 mgms. a day, in divided doses, in conjunction with DOCA will correct entirely the manifestations of adrenal insufficiency. In adrenal insufficiency secondary to pituitary failure, cortisone in the same dosage has a remarkable effect on the patient's general feeling of well-being. In secondary adrenal insufficiency, DOCA is seldom necessary.

Cortisone has a striking effect in female pseudohermaphroditism and macrogenitosomia praecox. The adrenal cortical hyperplasia in these conditions is controlled by 50 to 75 mgms. a day, and the patient's normal secondary sex development occurs. Since the optimal dose for each patient varies, these unusual cases should be handled where facilities for estimating steroid excretion in the urine are available.

Cortisone should not be used as a therapeutic test for adrenal insufficiency, because it affects so many other conditions favorably. It should not be used for its non-specific effect on the well-being of patients because it suppresses adrenal cortical function and in general obscures the clinical picture.

Adrenal Cortical Extract (ACE) and Lipo-Adrenal Cortex contain all the active principles of the adrenal cortex. They are very expensive and are useful only in treating acute adrenal crises, in which cortisone and desoxycorticosterone may not act rapidly enough. They should be available in all hospitals for such emergencies.

ESTROGENS

Also called female sex hormones, many preparations are available and the physician is constantly receiving advertisements claiming that

one or another is more effective. All these substances cause endometrial proliferation and breast stimulation to greater or lesser degree, in addition to their other actions.

Estrogens are either synthetic or natural, and nearly all are effective by mouth. There is no reason to give estrogens by injection, except to the rare patient who cannot tolerate any of the various preparations orally. Stilbestrol is a useful synthetic estrogen, and ethinyl estradiol is a useful natural one. Both are inexpensive and relatively well tolerated when given at bed time. Conjugated estrogens such as Premarin® are less apt to cause nausea but are more expensive. Estradiol dipropionate is a suitable preparation for parenteral use, a single injection acting over a period of five days.

Physiological or replacement estrogen therapy is given in the normal menopause only when vasomotor symptoms are severe enough to warrant the probable complication of uterine bleeding. Although 85 per cent of women go through the menopause without distressing vasomotor symptoms, a high percentage of these are unwisely given estrogens for non-specific symptoms occurring at the same time. Even in the 15 per cent who have severe vasomotor symptoms, the cardinal manifestation of which is the "hot flash," it is not often necessary to give estrogens. These patients can usually be tided over the readjustment period of six to twelve months by sedation and reassurance. If hormone treatment is necessary, 1.0 mgm. of stilbestrol or 0.05 mgm. of ethinyl estradiol each night will soon control the symptoms. After a few weeks, the dose should be gradually decreased and the estrogen stopped as soon as possible.

In the artificial menopause, which occurs after either surgical removal or irradiation of the ovaries, vasomotor symptoms tend to be more severe and should be treated with estrogens. Larger initial doses, 5 mgms. of stilbestrol or 0.5 mgm. of ethinyl estradiol, quickly control the symptoms and the daily dose can be reduced in a few weeks to the levels noted above. If a hysterectomy has been performed, daily treat-

ment can be given indefinitely without danger. If the uterus is present, therapy should be omitted for the last ten days of each month to avoid endometrial hyperplasia. In the castrated male, severe vasomotor symptoms occasionally occur and are readily controlled with physiological doses of estrogen.

Physiological estrogen therapy, combined with androgen, is indicated in postmenopausal osteoporosis. This disabling condition which usually involves the spine most severely may occur in both the normal and artificial menopause, but is more common in the latter. While these patients often show great subjective improvement with hormone treatment, objective x-ray changes cannot be demonstrated for years.

Estrogens are used to stimulate secondary sex development in patients with ovarian agenesis or selective pituitary insufficiency. It should be remembered, however, that puberty may be delayed until eighteen years of age in otherwise normal girls. It is best to withhold treatment until that age, hoping that spontaneous development will occur.

Estrogens should not be used to treat alopecia, small breasts, amenorrhea, irregular menses, sterility, frigidity, or sexual perversion in otherwise normal women. Estrogens should not be used physiologically in other than castrated males because of the resulting gynecomastia and testicular atrophy, each of which may be irreversible.

Pharmacological estrogen therapy is a useful adjunct to surgery and roentgen therapy in the treatment of some neoplastic diseases. In postmenopausal metastatic breast cancer, 25 to 100 mgms. of stilbestrol or 3 to 4.5 mgms. of ethinyl estradiol daily in divided doses may result in dramatic suppression of growth of the tumor and relief of symptoms in a few weeks. Such large doses of estrogen do not cause uterine bleeding, and uncommonly cause hypercalcemia or sodium and water retention. In metastatic cancer of the prostate, 3.0 mgms. of stilbestrol or 0.15 mgm. of ethinyl estradiol daily in divided doses may suppress the disease for a long period, after the

beneficial effects of orchiectomy have subsided. When these amounts of estrogen are no longer beneficial, the large doses used for breast cancer may be given in an attempt to suppress tumor growth for an additional period. Such doses of estrogen sometimes control pain in multiple myeloma, without any objective beneficial effect on the bone lesions being demonstrable by x-ray.

Pharmacological doses of estrogen have been reported to benefit uterine bleeding from endometrial hyperplasia, threatened abortion, and habitual abortion. These results have not been confirmed, however, and estrogens should not be used for these conditions in general practice.

PROGESTATIONAL HORMONES

Secreted by the corpus luteum, these substances cause secretory changes in the endometrium prior to menstruation and pregnancy, and maintain pregnancy during the first trimester.

Progesterone is relatively ineffective by mouth and is given intramuscularly in doses of 10 to 25 mgms. daily. Pregneninolone or ethisterone, however, is effective by mouth in divided doses of 40 to 60 mgms. daily.

In uterine bleeding due to endometrial hyperplasia, 25 mgms. of progesterone intramuscularly or 60 mgms. of pregnenolone orally daily for five days will cause shedding of the endometrium and cessation of bleeding. This treatment has been called a "Medical D. & C."

In threatened abortion during the first third of pregnancy, 40 to 60 mgms. of pregnenolone daily may correct a deficiency in corpus luteum secretion and maintain the pregnancy.

Although these hormones have been recommended for other conditions in the female, they have no pharmacological or suppressive action. Other indications for their use are not clearly defined; they are very expensive and should be used most judiciously by the practicing physician.

ANDROGENS

Also called male sex hormones, these steroids cause not only secondary sex development in the

male and virilization in the female, but also retention of nitrogen and storage of protein in both sexes.

Testosterone in its various forms is still the androgen of choice. Although it would be most desirable to have a steroid that has protein-storing effect without androgenic effect, no such compound has yet been discovered. Both methyl-androstenediol (Stenediol®) and Stanolone® are virilizing when given in doses large enough to produce nitrogen retention comparable to testosterone.

Methyl testosterone is effective by mouth; the physiological or replacement dose is 20 to 40 mgms. daily in divided doses. It is about twice as effective buccally, since none is inactivated by the liver when it is administered by this route. Methyl testosterone occasionally causes jaundice and should then be discontinued in favor of some other preparation. Testosterone propionate is effective intramuscularly, in doses of 25 mgms. three times a week. Two new preparations, testosterone enanthate and testosterone cyclopentylpropionate, are longer acting and need to be given intramuscularly only once a month in doses of 250 to 400 mgms.

In the male, testosterone is used for both its androgenic and protein-storing effects. The androgenic effect is produced only in the patient who is androgen deficient, while the protein-storing effect occurs in any patient. In hypogonadism of either testicular or pituitary origin, testosterone quickly causes secondary sex development as well as protein storage. In impotence without evidence of androgen deficiency, testosterone has no effect on the impotence although it may cause some improvement in well-being. In delayed puberty, when the patient is severely upset emotionally, 10 to 20 mgms. of methyl testosterone daily for two months will hasten secondary sex development and cause no harm.

Testosterone should not be given to every man over fifty who complains of nervousness, fatigue, insomnia and a variety of other non-specific symptoms. There is no menopause in the

male comparable to what invariably occurs in the female. The male climacteric is a term that has been used to describe a variety of non-specific symptoms. It is unwise, expensive and unrewarding to treat these symptoms with testosterone.

Testosterone is of no value in treating gynecomastia, or enlargement of the male breast, whether this be unilateral or bilateral. In fact, testosterone can actually cause gynecomastia when given in large doses to either normal or hypogonadal men for a long period.

In the female, testosterone is indicated in but a few conditions. In hypopituitarism, the response to testosterone alone is usually dramatic. Most of these patients do well on 30 mgms. of methyl testosterone daily, with no other replacement therapy and without virilization. It is probably best to give such patients 25 mgms. of cortisone daily, too, however. In postmenopausal osteoporosis, testosterone in conjunction with estrogen is more effective than estrogen alone. Five to 10 mgms. of methyl testosterone a day is sufficient and does not cause virilization.

Although recommended for other conditions in the female, testosterone should not be used for

long periods because of the danger of virilization. Unfortunately, such virilization is usually irreversible and the treatment should not be worse than the disease.

In both sexes, testosterone is valuable in increasing protein storage during convalescence from a severely debilitating disease or injury. It has no harmful effect if given over a period of a few weeks and may significantly shorten convalescence.

Pharmacological doses of androgen, 80 to 100 mgms. of methyl testosterone daily, or 100 mgms. of testosterone propionate intramuscularly three times a week, have been helpful in the palliation of metastatic breast cancer. In premenopausal patients, only testosterone should be used. In post-menopausal patients, testosterone as well as estrogen may have a beneficial effect, especially on the osseous lesions. Hypercalcemia and sodium retention are complications which not infrequently occur and must be kept in mind by the practicing physician. Virilization is common but is justified if significant amelioration of symptoms is achieved.

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ORTHOPEDICS IN GENERAL PRACTICE¹

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In any brief discussion of orthopedics it is impossible to do more than deal with it in a general way even though one limits the discussion to its role in General Practice. Orthopedics began as its Greek derivation defines it as a specialty to straighten children. It has enlarged to embrace all the problems of neuromusculoskeletal origin. Therefore it impinges upon all the specialties and for diagnosis and treatment goes arm in arm with them.

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While orthopedics is a specialty within a specialty, the orthopedist likes to be a member of the team who even when he is asked to carry the ball remains aware of the G. P. Quarterback who has the whole team in hand at all times. The orthopedist also does his best work when he, like the G. P., considers more than the specific problem that may seem small but is so extremely important to the patient. He, too, must never forget that he treats not diseases or disabilities but patients and that patients with similar problems do not react in the same way to them

nor do they react in the same way to the same treatment for those problems.

In a discussion of orthopedics in General Practice one is apt to consider age groups of patients and therefore direct the discussion toward the Pediatrician who deals primarily with children and then to the General Practitioner who deals primarily with adults.

In all age groups there is the problem of trauma, most commonly fractures. Such cases are usually seen first by the medical man whose problem it becomes to manage the patient. It is his decision as to the amount of responsibility he wants to assume for the management of the first aid and of the definitive treatment. There is little doubt that all fractures should have emergency care. When a patient with a fracture is seen promptly, the whole problem becomes easier. Not only is the patient given prompt relief but one finds the fracture is easier to treat. Delay sometimes makes it impossible to carry out treatment that would have been indicated earlier.

The first principle in the treatment of any fracture is to immobilize it. The medical man may not care to do more than that. The next step is definitive treatment which may be no more than continuation of the immobilization, or may be reduction of the fracture by closed or open methods. It is well to obtain roentgenograms before and after reduction of a fracture. This is important for diagnosis, for aid in planning and carrying out the reduction and also as a safeguard for medicolegal reasons. Roentgenograms taken during the course of the treatment are also a wise precaution in order to apprehend any displacement of the fracture in its retentive apparatus and to observe the degree or the quality of the union. Immobilization should be maintained until firm union is demonstrated clinically and roentgenographically or else one can expect slow union or even non-union. Compound fractures by all means need speedy care because treatment delayed beyond six hours increases the incidence of infection many-fold.

Therefore, whoever is to be responsible for the treatment of a fracture should assume that responsibility as rapidly as possible and carry out the treatment promptly.

It is impossible to discuss briefly all the facets of fracture care. In recent years the plastic and improved metallic substances have allowed an advance in the surgical handling of many fractures and made cast fixation unnecessary. Firm internal fixation has done most for the problem of the aged with a fracture of the hip. With the improvement in anesthesia it has been possible to operate on the very aged with a hip fracture, immobilize the fracture, and then quickly mobilize the patient. While the fractured hip is still a difficult fracture and is called by many "the unsolved fracture," the newer approach to the problem has resulted in better hips and a much lower mortality.

Most of the non-traumatic orthopedic problems of children are congenital anomalies or postural anomalies. Dislocations of hips, unilateral or bilateral, are very difficult to detect unless one is constantly on the alert or takes routine roentgenograms. Roentgenograms are the only positive diagnostic aid but by careful or repeated examinations for asymmetrical gluteal folds or thigh folds one can suspect a dislocation or a subluxation of a hip. If the dislocation is bilateral, a wide perineum may be a clue. If the child with a dislocated hip is old enough to walk, one finds a painless limp associated with an unstable hip gait and a freely movable hip. A bilateral dislocation presents a waddling gait with bilateral hip instability. Whenever the diagnosis is made, prompt treatment is indicated. Usually the younger the child the more successful is the reduction and the more satisfactory the end result.

Club feet of the equinovarus type or of the calcaneovalgus type are obvious at birth, but metatarsus varus deformity, sometimes called one-third of a club foot, may be slight and not be so obvious until weeks have elapsed. One sees in the metatarsus varus the forefoot adduction.

Equinovarus feet always require casts or similar retentive therapy for many months and need supervision for a year or more. The calcaneovalgus foot needs much less treatment, occasionally none other than stretching the foot into a position of equinovarus and this can be done by the parents or occasionally by retentive apparatus. Metatarsus varus requires some retention and correction in special shoes or may occasionally require casts, Denis Browne splints or similar fixation for several months. Except for a few of the calcaneovalgus feet none of the club feet correct themselves.

Much more numerous than the congenital anomalies are the prewalking children with bow legs, tibial rotation, external rotation of one or both legs and the walking children with these abnormalities plus intoeing or out-toeing gaits and pronated feet. Such problems are practically never due to disease but usually are caused by faulty posture in infants; such as, prone lying or knee-chest positions that serve to produce external rotation of legs or internal rotation of tibiae. Bulky diapers can produce bowing of femora. If such things are noted early and correction started, the deformities or contractures are minimal and probably need no other treatment.

While most of these defects are minor and of short duration even without treatment, some of them persist beyond the tolerance of the parents, especially of the grandparents, and most particularly the neighbors and friends so that some type of treatment is mandatory. Even beyond the need to heed such pressure is the fact that quite often the recovery is hastened by simple shoe corrections which should be supervised and not used too long. A bow leg can rapidly be translated into a knock knee and corrections for intoeing gaits can pronate heels and weaken arches.

When one delves into the problems of adult orthopedics in General Practice, one can run the gamut of all the diseases of the neuromuscular and osseous systems, a wealth of diagnostic and

therapeutic problems. Probably the patients that give the greatest concern are those with short or long histories of back pain; shoulder, and neck pain; leg and foot pain. Here is where the orthopedist is called upon to show his ingenuity, to profit by his inheritance from "strap and buckle" ancestors, and even to carry a load of complaining delicate protoplasm on his shoulders for many months.

About ninety-five per cent of such patients are treated conservatively. About five per cent are in a category of acute pains, low back or feet, that require operative treatment. Therefore, for the vast majority of patients the orthopedic psychologist must carry on with the help of physical therapists and all their aids in an effort to strengthen weak structures by the use of supports for feet, for legs, for spines and by exercises for weak muscles in addition to stretching contractures of feet, legs, or backs. With patience, persistence, and time, many of the problems that are related to posture faults can be made symptom-free. Often one hears the story of weak feet with pain in the forefoot or in the mid tarsal section and the pain is promptly relieved by supportive shoes or arch supports or both. Frequently a complaint of medial knee pain is relieved by correction of pronated heels. The ache in legs and low backs may be related to faulty dynamics of feet and it is not unusual to find low back pain associated with increased lumbar lordosis. There are many causes of low back pain, beyond the orthopedic field, and actually every specialty has its own type of low back pain but the patients with back pain due to static difficulties are typically those with pain that is produced by the upright position or strain but who have relief by recumbency. Many of them are helped by simple supports.

Then there are the patients with a minor degree of posture strain who because of nervous tension or inadequacy engage in a continuous search for a physical basis to justify major complaints. In such instances the problem may be clouded even more by a background of com-

pensation. The treatment of such patients is most discouraging. It becomes almost entirely, if not completely, a non-orthopedic problem.

The smaller number of patients that are surgical problems, the discs and spine fusions are more spectacular or perhaps more disappointing but are best known and most often recorded. Disc removal will cure many patients with low back pain but many patients will continue to have pain because the back is not supported sufficiently or conversely because the back remains too tight due to ligamentous and muscular contracture. Many of the disappointing postoperative disc cases will be helped by braces or spine fusions and many more will be helped by physical therapy directed toward overcoming contracture.

Another group of patients that are prominent on the list of orthopedic problems in General Practice are the bursitis, arthritis, tendonitis, tenosynovitis and allied problems. Many of them present compound disorders, of strain plus the "itis"; round shoulders and bursitis or myositis; arthritis of the spine with disc lesion and lumbar lordosis; arthritis and knock knees or bow legs; bunions, hammer toes, weak arches and gout.

Therefore, when one indulges in an attempt at specific therapy for arthritis one should not lose sight of the importance of the other factors. Bad knees might be helped by cortisone but also by some support. Attacks of gout may be helped by drugs but the incidence of attacks might be lessened with arch supports. On the whole, the management of this group of patients is sometimes difficult but common sense should prevail. In the acute stages joints should be put at rest, but as soon as possible motion should be started. Joints rapidly become stiff because of soft tissue contractures. Deformities therefore ensue that are easier to prevent than to treat.

In a comparatively few paragraphs one is obviously unable to be specific about the management of orthopedic problems or even to mention all the orthopedic problems but it becomes evident that orthopedics has a place in General Practice, to recognize anomalies, to appreciate the mechanism of acquired deformities and static difficulties and to institute the treatment that will relieve dynamic strains as well as to perform the specific therapy indicated.

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ELECTROLYTES IN CONGESTIVE HEART FAILURE¹

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In this discussion three aspects of electrolyte physiology in congestive failure will be considered. First,—a brief report on current ideas of salt retention; secondly changes in electrolytes induced by various forms of treatment and lastly, some remarks about certain specific electrolyte abnormalities.

In the last ten years, salt and water retention

and heart failure have become so closely associated in our thinking that one is now a little embarrassed to describe a struggling, tired and over-stretched ventricle with blood backed up behind it. Only the most naive second-year medical student in physical diagnosis will accept this old-fashioned simple picture without challenge. Warm argument between the schools of forward failure and backward failure as to the mechanism of sodium and water retention has continued, but the fact that cardiac edema represents an essentially *renal* kind of mischief with sodium is now

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universally accepted. The forwardists and backwardists differ only in the presumed initiating mechanism which is believed to operate (Fig. 1). The secondary effect agreed upon by all parties is the reluctance of the kidneys to release sodium to the urine (1).

The doctrinaires of forward failure maintain that the kidney is alerted to hold on to sodium and water by a mechanism which is triggered by a reduced cardiac output (2). On the other hand, the "true believers" in backward failure maintain that the failing heart results in high venous pressure, increase in transudation and a lowering of blood volume. The kidney is thereby tricked into saving salt and water—a response which is appropriate for *true* dehydration (3). Such a possible mechanism might operate to force sodium retention in the face of increasing edema. The crucial, but as yet unsettled point, is concerned with whether blood volume is high or low in early heart failure (4).

To descend now from this rarified atmosphere of teleology to more solid footings, we might consider how the kidney is thought to do its work on sodium. Since the urine sodium represents the difference between the filtered load and the amount reabsorbed by the tubules, attention has been directed to both filtration and tubular activity.

It has certainly been clearly demonstrated in Dr. Elliott Newman's laboratory and by many others that sodium excretion is far from being dependent upon glomerular filtration alone (5). A diversity of stimuli may alter the renal tubular activity toward sodium with little or no change in filtration. Most students of this problem now agree that sodium retention is probably largely mediated by humoral or neural influences on the renal tubular cell itself. A great deal of attention is being directed to the possibility that adrenal steroids may be the mediators responsible for cardiac edema (6).

The nature of the signals received by the renal tubular cells and how they are transmitted are unsolved problems. A group of possibly related

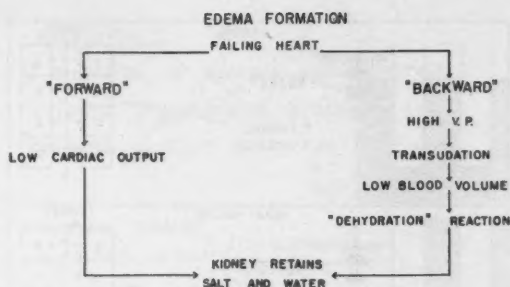


FIG. 1. Proposed mechanisms leading to retention of sodium chloride and water in congestive heart failure.

receptor mechanisms has recently been demonstrated to alter the renal excretion of sodium rather strikingly. For instance, in Dr. Newman's laboratory about five years ago, it was shown that the erect position and exercise result in a rather sharp fall in sodium and water excretion without a corresponding drop in filtration (7). Others have shown that placing tourniquets around the neck or around the lower extremities or altering the venous pressure or distribution of blood in various portions of the body seems to have powerful effects upon sodium excretion. Compression of the neck results in an increase in sodium excretion, whereas increasing the venous pressure in the lower extremities diminishes sodium excretion (8).

A possible unifying explanation for these phenomena would be the existence of a so-called "volume receptor" (9). The hypothesis has been proposed that some unknown part of the vascular compartment is sensitive to the degree of filling of that portion of the vascular tree. Figure 2 illustrates the presumed operation of the volume-receptor mechanism. The normal plasma volume is considered to be under control of adjustments made in the sensitive area, which functions in a manner similar to a thermostat for temperature control. In congestive heart failure the kidney behaves as though receptors controlling the volume of fluid within the body are calling for increased amounts of salt and water, despite the edema. The presumption is that a sensitive vascular compartment is either underfilled or

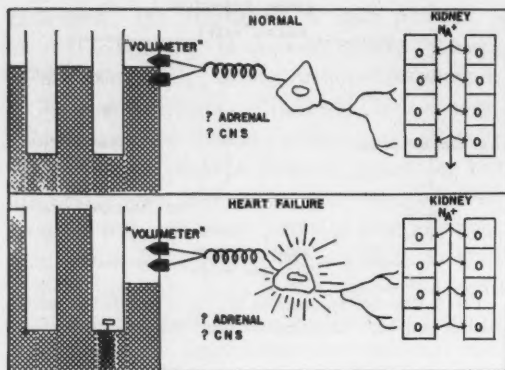


FIG. 2. The volume receptor hypothesis: The upper half of the figure illustrates the "normal" more-or-less quiescent receptor. Sodium is retained by the kidney in normal amounts. In cardiac failure, illustrated in the lower half of the figure, the mechanism for sodium retention is presumed to be activated by an underfilled "compartment," not necessarily in equilibrium with other vascular or extravascular fluid compartments. Sodium is retained in excessive amounts.

acts as though it were under-filled, as illustrated in the lower half of the slide, thereby putting into play the mechanism for increased renal tubular reabsorption of salt. It seems clear that in cardiac failure certain homeostatic mechanisms of the body are not only under stress but possibly out of order as well. As an illustration of this, the antidiuretic activity of the urine and blood seems to be increased in certain patients despite a low serum sodium (10). This is a reversal of the usual situation in which the antidiuretic activity might be expected to be inhibited because of the reduced osmolarity (11). Heart failure may thus resemble the house with an ice-cube in the thermostat box. The house will be quite overheated simply because the receptor mechanism is being fooled.

We have become so accustomed to considering the kidney as the regulator of the composition of the internal fluid environment that it seems almost remarkable that the same organ should have an interest in the volume of that environment as well. Yet, it is clear that there is a powerful mechanism, mediated via the kidney, for controlling volume and that these adjust-

ments can and sometimes do take precedence over those for maintaining the normal concentration of electrolytes.

With regard to the transfers of salt and water between extracellular and intracellular fluid compartments in congestive failure, several balance studies have been reported with attention to this very difficult subject (5, 12). We should note that such observations have usually been restricted to periods of diuresis since it is difficult to observe patients who are decompensating. The data are a little too complex to discuss in detail at this time. We will note only that significant changes in intracellular distribution of electrolytes and in the degree of intracellular hydration frequently accompany the congestive state. In certain patients with cardiac failure significant depletion of intracellular potassium is encountered, sometimes totally out of proportion to the degree of nitrogen lost. This, however, is not invariably seen and not all patients can be made to retain an extra quantity of administered potassium. Significant amounts of sodium are present in the intracellular compartments although the actual concentration of sodium within cells may be relatively small. The cells constitute so much of the body that very small concentration changes within them may represent tremendous shifts of body sodium. Data on this subject are still quite sketchy since we have no good way of measuring either the volume or the composition of intracellular compartments of the body.

Our second topic deals with the effects of therapy on electrolytes and water in congestive heart failure. I believe that we can group so-

DIAMOX
INHIBITION OF CARBONIC ANHYDRASE
LESS H^+ AVAILABLE IN TUBULE
 Na^+ AND HCO_3^- EXCRETED
TENDING TOWARD ACIDOSIS WITH —
HIGH SERUM $[Cl^-]$
LOW SERUM $[HCO_3^-]$

FIG. 3. Outline of the presumed mode of action and results of Diamox therapy.

called physiologic measures, such as rest, digitalis, the removal of fluid or low sodium diets as having similar effects. All these lessen edema by virtue of a net loss to the body of isotonic sodium chloride solution in the normal proportions as they exist in the extracellular fluid. Large movements of water and electrolytes may occur without very much change in serum concentration. On the other hand, stronger diuretics may produce rather striking abnormalities in concentration.

Diamox appears to be effective by virtue of its ability to block a normal mechanism for acidifying urine (Fig. 3) (13, 14). By making hydrogen ion unavailable in the renal tubule, the cations sodium and potassium which are usually exchanged for hydrogen, are lost. The net result is an alkaline urine containing large amounts of sodium and potassium together with bicarbonate ion. Edema is lost and the patient develops acidosis with reduction in the serum bicarbonate and elevation of the serum chloride.

This is quite a different kind of diuresis from that induced by mercurials (Fig. 4). The diuretic action of mercury has been intensively investigated for many years (15). I think it is now agreed that mercurial induced diuresis is the result of the inhibition of the renal mechanism for reabsorbing chloride. Many kinds of evidence are available to support this idea. First,—the urine after mercury is given usually contains more chloride than sodium, whereas it will be recalled that the extracellular fluid normally contains more sodium than chloride (16). Furthermore, it has been shown that in the absence of available sodium large amounts of potassium will be lost. This variability in the matching cation certainly suggests that chloride is the primary site of action. Repeated doses of mercury eventually result in a fall in serum chloride.

As far as the practical aspects of mercurial treatment are concerned, diuresis is greatly potentiated by rest, recumbency and by having available adequate chloride for excretion. Contrariwise, mercurial diuresis is inhibited by

MERCURIALS

? INHIBITION OF SUCCINIC DEHYDROGENASE

CHLORIDE REABSORPTION BLOCKED

CHLORIDE DIURESIS WITH Na^+
 K^+
 H_2O

TENDING TOWARD -----
ALKALOSIS WITH LOW SERUM $[\text{Cl}^-]$
HIGH SERUM $[\text{HCO}_3^-]$

FIG. 4. Outline of the presumed mode of action and results of mercurial diuretic therapy.

exercise and by a low serum chloride. It has also been shown to be inhibited by opiates, such as morphine.

So-called mercurial refractoriness may be due to no more than the failure of the patient to get off his feet, inadequate chloride intake or the administration of excessive amounts of morphine. This is not to imply that true mercurial fastness does not exist but an apparent failure to respond should not be a reason for immediate despair without checking further (15).

Abnormalities of electrolyte concentration seem to be increasingly recognized, not only in congestive failure but in all sorts of conditions characterized by edema. It is not necessary for physicians to assume all the blame for electrolyte disturbances, since they are not always the result of overdose of diuretic agents but are quite as frequently features of the disease itself. It should be emphasized that every deviation from the normal is not necessarily disastrous nor in need of vigorous therapy.

One of the most commonly seen abnormalities is the syndrome of hypochloremic alkalosis (Fig. 5) (17). This disorder, which is iatrogenic, is characterized by a reduced serum chloride with a corresponding rise in the carbon dioxide combining power and a normal sodium. The clue to the clinical recognition of this trouble is usually the onset of mercurial unresponsiveness after a series of injections. The patient usually gains more edema and may have muscle cramps and shallow breathing. The cause of this particular

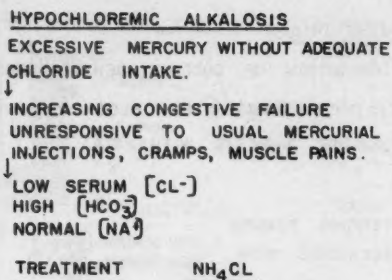


FIG. 5. The syndrome of hypochloremic alkalosis.

aberration is relatively straight-forward, namely, chloride loss induced by the administration of mercury in the face of low chloride intake. The treatment in turn is correspondingly simple. The chloride depletion can be restored by the administration of ammonium chloride or any other salt containing chloride ion. Even dilute hydrochloric acid may be given by mouth.

It would seem more sensible to use liquid ammonium chloride preparations rather than the commonly used enteric coated capsules which are quite capricious in their absorption. Usually when this is done in a patient with hypochloremic alkalosis there is a rapid rise in the serum chloride to normal with a restoration of response to mercurials.

The synergism of ammonium chloride and mercury which has been known for many years, is apparently due to the provision of adequate amounts of chloride ion.

There has been some interest in the possibility that the alkalosis with hypochloremia may also be accompanied by a deficiency of body potassium, not only because of potassium loss in the urine but also because of a well known association of alkalosis with potassium deficiency which was first pointed out by Darrow and others some years ago (18). This rather complex association of alkalosis and hypokalemia has been studied in some cardiac patients with variable findings (19). There is occasional deficiency in body potassium in patients with hypochloremic alkalosis but this is not invariable. There seems to be no justification for routinely giving large doses of potassium chloride to patients who are

getting mercurial diuretics. In actual fact, patients with heart failure sometimes respond rather poorly to large amounts of potassium so that some caution is called for. On the other hand, the possibility of potassium depletion in some cardiacs cannot be dismissed, particularly in individuals who begin to show evidence of digitalis over-dosage on a regimen which previously had caused no such symptoms (20). Manifestations of digitalis poisoning can be brought out by depleting an individual of potassium and conversely the administration of potassium can reverse the toxic reaction of digitalis. The old clinical observation that over-digitalization is sometimes seen in patients who are being vigorously diuresed, which was at one time attributed to the mobilization of digitalis from edema fluid, is now explained more rationally as due to the loss of body potassium and hence increased sensitivity of the myocardium to digitalis. Since we have no sure-fire guides to potassium depletion, despite the help given by the flame photometer and the electrocardiogram, perhaps we ought to play safe and encourage cardiac patients to drink more fruit juice.

The next group of important electrolyte disturbances which we encounter in congestive heart failure is characterized by a reduction in the serum sodium. Actually there are a variety of situations associated with hyponatremia and it would be well to make distinctions since they have very different etiologic prognostic and therapeutic aspects (21). In a variety of chronic wasting diseases, such as pulmonary tuberculosis, low sodium and chloride concentrations may exist without any noticeable abnormalities in thirst, water balance, blood volume, etc. It is felt that chronic hyponatremia in these situations is a reflection of the reduction in the osmolarity of body cells as a result of chronic illness (22). There are some investigators who think this mechanism may operate in patients with chronic congestive failure.

The low serum sodium which is observed in many cardiac patients has been divided into several types, a classification which is sometimes

only of academic interest. So-called *depletion* hyponatremia is thought to be due to excessive diuretic therapy,—whereas dilution hyponatremia is thought to be the result of disproportionate *water* retention, either as a result of reduced osmolality in cells or as a result of increased activity of the antidiuretic hormone of the posterior pituitary. This is another subject where there are more theories than facts.

The problem which arises in clinical practice is to decide whether a patient who is grossly edematous and is observed to have a very low serum sodium has had too much mercury and too little salt, that is to say whether he is "depleted," or whether he has retained more water than salt, that is to say, has been "over-diluted."

In general it is difficult or impossible to know just which factor is responsible in any given patient without detailed balance studies or meticulous prior clinical observation. Simultaneously with the increasing use of mercurial diuretics and low salt diets, low sodiums are being increasingly recognized but, on the other hand, sodium concentration is being more commonly measured. Insofar as a low salt syndrome is therapeutically induced, it may be seen in the most cooperative patients who *follow* rigid low salt diets. Perhaps some are spared this complication because they consciously or unconsciously take more salt than has been prescribed. The syndrome also occurs in patients in whom edema cannot be entirely mobilized for mechanical reasons such as in cirrhosis or vascular obstruction (23).

When symptoms develop there are noted weakness, restlessness, apathy, psychosis, confusion, anorexia, nausea and vomiting, fall in blood pressure, occasional fainting and the development of progressive renal insufficiency with oliguria and sometimes increasing edema (Fig. 6) (24). Patients do not excrete a water load normally and it is in this particular situation that the so-called volume receptors may be over-active and taking precedence over mechanisms for maintaining the tonicity of the extracellular fluid. It is interesting and important that thirst

" LOW SALT SYNDROME "	
1. DOES NOT INCLUDE ALL HYPONATREMIA	
2. SYNDROME:	WEAKNESS, APATHY, CONFUSION, ANOREXIA, NAUSEA, VOMITING, HYPOTENSION, OLIGURIA, RISING NPN, INCREASING EDEMA
3. DESPITE LOW $[Na^+]$, THIRST CONTINUES AND ANTIDIURETIC ACTIVITY INCREASED.	
4. PROGNOSIS	OMINOUS.
5. IF R_2 IS NECESSARY, HYPERTONIC NaCl AND WATER RESTRICTION.	
6. PREPARE FOR RAPID SHUTTLE BETWEEN FRYING PAN AND FIRE.	EDEMA WORSE.

FIG. 6. The "low salt syndrome"

continues despite the hypotonicity of the extracellular fluid. To push our metaphor, not only are there ice-cubes in the thermostat, but there are roaring fires in every room. A very low serum sodium with symptoms is an extremely ominous prognostic sign. Such profound electrolyte disturbance reflects rather serious alterations of cellular integrity and seems to occur in patients with the worst cardiac reserve. The observed mortality is very high despite occasional temporary symptomatic improvement or clinical improvement (25).

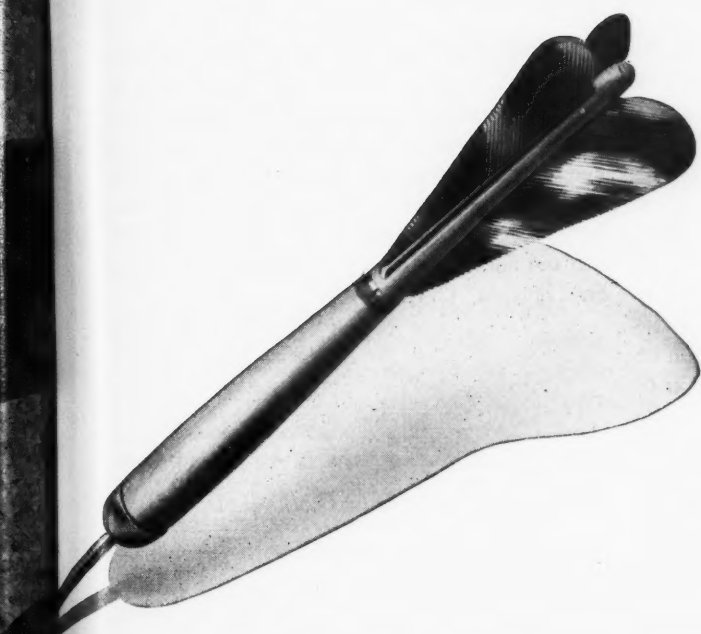
A low serum sodium concentration calls for individualization and conservatism in treatment. The recent enthusiasm for hypertonic sodium chloride in all cardiatics with low serum sodium is not warranted. Treatment should be directed at the patient and not at the serum sodium.

A low sodium concentration in itself may not necessarily be harmful, particularly if it has been of long standing. A sudden fall in concentration should put us on the alert for the development of symptoms as described above and these should be the indication for the rather heroic and discouraging procedures that are required. Unfortunately, no hard and fast rules exist to guide treatment.

If treatment is to be attempted hypertonic saline should be administered intravenously. It would seem safe to proceed empirically with the clinical response as a guide rather than to rely upon elaborate calculations of the presumed deficit of body sodium. These equations for calcu-



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Bronchopulmonary Infection
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Chronic Pyelonephritis
Mixed Bacterial Infections
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lating so-called deficits are not too useful for many reasons which we will not discuss here except to repeat that we often don't even know if there is a deficit. It is not practical to give enough salt by mouth. The venous pressure, urinary output and serum sodium should be watched carefully. 100 to 400 ccs. of 5% saline may be given intravenously, usually without immediate untoward effect. Despite the extreme thirst which develops, it is important to the success of the treatment that fluid restriction be quite rigorous on the day of administration of hypertonic saline. Certainly, no more than one litre of fluid should be permitted. Unless this is done, thirst will drive the patient to drink enough to dilute the sodium chloride and the net result will be no different than if the patient had been given normal saline or even hypotonic saline by vein or by mouth. Not only will there be more edema but there will be no rise in the serum sodium. It is our aim to raise the concentration and not to replenish deficits, since the damage to the patient is presumably due to the low sodium concentration.

It is quite apparent that the use of hypertonic saline adds considerably to the total body sodium. Unless a diuresis can be initiated rapidly, the patient will be worse off than ever as soon as he is permitted fluids by mouth. For this reason it may be well to administer a mercurial diuretic with or without aminophyllin an hour or so before beginning the saline infusion (26). This procedure may occasionally result in a loss of edema concomitant with improvement in serum sodium.

We might appropriately finish with a quotation from a recent paper by Dr. Gilbert Mudge,—"Electrolyte metabolism comes close to being an exact science. Its measurements are so precise that at times they almost become endowed with the mystical powers of absolute truth and one faces an almost irresistible temptation to treat the abnormality that is easiest to demonstrate by a laboratory test. But any single determination measures only one dimension. For example, a value for the serum sodium tells you exactly only

one thing,—the concentration of the sodium in the serum. It does not tell you the volume in which that sodium is distributed, it does not tell you how long the sodium has been at that level, nor does it tell you the venous pressure or the cardiac output, or the nature of any compensatory reactions. But above all, it does not tell you the number of angels that can dance on the head of a pin" (27).

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Special Article

CANCER OF THE LUNG^{1,2}

O. C. BRANTIGAN, M.D. AND C. Y. HADIDIAN, M.D.

It is common knowledge to the medical profession and should become so to the public that cancer of the lung is a potent danger in people over forty years of age, especially in the male sex. Since this condition ranks second only to carcinoma of the stomach in the male, the attention it has been receiving by the profession, internists and surgeons alike, is certainly warranted. Even though the extensive investigations that have been carried out during the last decade have not resulted in specific answers to such questions as etiology and prevention, they have served amply to stress the paramount importance of early diagnosis and early surgery. At present efforts along this line seem to be the only means by which practitioners can hope to obtain tangible results in improving the prognosis of patients with carcinoma of the lung. Overholt (8) found an average lapse of ten months from the onset of symptoms to the time of operation. This evidently is a major factor in the highly unsatisfactory statistics connected with the cure of bronchogenic carcinoma. The delay is especially to be deplored because lung lesions are particularly susceptible to early roentgenographic detection.

The medical profession recognizes the importance of a persistent or chronic pulmonary symptom that develops in a formerly healthy person; however, the public is yet to be so instructed. It is important to eliminate from the

minds of many people the theory that the so-called "cigarette cough" is necessarily an expected or benign symptom. The general public should be taught that cough or the "cigarette cough" may be an important first warning that there is present an upper respiratory tract or pulmonary disease and most important of all that the disease may be cancer of the lung. This is especially true if a persistent cough develops in a person over the age of forty who formerly was free of chest symptoms.

This study is based upon 298 private patients with carcinoma of the lung. There were 281 men and 17 women or a ratio of approximately 17 to 1. The ages varied from thirty-two to eighty. In 123 patients or 41.2 per cent operation or exploration was not recommended because of demonstrable distant metastasis or because of pleural fluid showing malignant cells. In 175 patients or 58.8 per cent thoracotomy was performed. Of those subjected to thoracotomy the lung was resected in 114 patients or 65.1 per cent. The hospital mortality rate of those in whom the lung was resected was 30 or 25.3 per cent. This high hospital mortality rate is the result of assuming that in the face of a proven diagnosis of cancer of the lung operation is justified even in poor risk patients and because of the belief that once thoracotomy is undertaken the lung should be removed if technically possible although part of the chest wall, pericardium, auricle and even the superior vena cava must be sacrificed. This attitude is reflected in a high resectability rate. The most frequent cause of death was cardiac failure and/or coronary heart disease and this occurred in 14 of the

¹ From the Department of Surgery, University of Maryland School of Medicine. Submitted October 8, 1954 for publication in the MARYLAND STATE MEDICAL JOURNAL.

² One of a series of papers from the Maryland Division of the American Cancer Society that will appear from time to time.

30 deaths. The ages of those who died after resection were between forty-one and seventy-four years, with an average of 59.3. Irrespective of extent or type of disease in those who had lung resections and survived the operation 22 per cent have survived five years or longer. The follow-up has been complete. The longest survival is now thirteen years. This patient did not have a thoracoplasty or pulmonary prosthesis and although he is now fifty-eight years of age he is without pulmonary emphysema or cardio-respiratory impairment.

The literature abounds with publications relating to the etiology and pathogenesis of carcinoma of the lung. The results obtained are as yet inconclusive and at best preliminary. The most popular theory of the cause and effect relationship of tobacco smoking and cancer of the lung is still under intense investigation. Most authors seem to agree that there has been both a relative and an absolute increase in the number of cases of lung cancer.

Since the lung arises from a single bud from the primitive gastrointestinal tract, all epithelial elements have a common origin and all lung cancers are therefore bronchogenic in origin. There is recognized from the pathologic point of view the highly undifferentiated carcinoma or the old oat cell carcinoma of the lung on one end of the scale and the highly differentiated cancer at the other end of the scale, the highly differentiated types being the squamous cell carcinoma, the adenocarcinoma and the alveolar cell carcinoma. It is practically impossible to base prognosis upon the pathologic type, except that generally speaking the more undifferentiated the carcinoma the more malignant is its course. In treating carcinoma of the lung with roentgen ray therapy it was found that one patient who had a highly anaplastic carcinoma by bronchoscopic biopsy, several months later at autopsy examination revealed a squamous cell carcinoma. The change probably was the result of roentgen ray therapy. Perhaps the cell type does not

necessarily remain constant throughout the course of the disease.

Norris (3) divides lung cancers according to their bronchial origin into three groups: a) those arising from the main or lobar bronchi, 50 per cent; b) those arising from segmental bronchi, 25 per cent; c) those of peripheral origin, 25 per cent. It is evident that lesions arising from the main or lobar bronchi produce cough as a symptom much earlier than peripheral ones. Eventually wheezing becomes apparent on the side of the lesion as a result of partial obstruction. Total lung or lobar emphysema followed by atelectasis usually occurs. A localized area of emphysema is a most significant finding when the lesion arises from a segmental bronchus, especially when followed by atelectasis. This can be detected both fluoroscopically and by radiography. The peripheral carcinoma may be free of any subjective or objective symptoms except the roentgenographic finding. It is in this type of carcinoma that the first symptoms often are those caused by distant metastasis.

The symptoms of carcinoma of the lung are highly variable. The silent phase, as described by Overholt, is worthy of serious consideration but frequently it depends too much upon the acuity of the doctor taking the history and the patient giving it, or it depends upon the ability of the doctor interpreting the chest roentgenogram. Any person over forty years of age who develops a chronic pulmonary symptom or chest complaint of any type should be suspected of having carcinoma of the lung. The triad of chronic cough, expectoration of blood and pain in the chest usually suggest a diagnosis of cancer of the lung. These facts must be made known to the public if surgical help is to be given to the patients who in the future are to make up the forty per cent who are inoperable when first seen by the surgeon.

The symptoms related to cancer of the lung need not be referred to the chest nor need they be referred to the abdomen. In 298 patients there have been three patients whose symptoms have

been referred entirely to the abdomen. Three other patients with the same symptom complex but not included in this series have been observed. In one of these patients a diagnosis of gastric ulcer was made and this diagnosis was confirmed at operation when a subtotal gastric resection was done. Approximately one year later the patient returned with recurrence of the epigastric pain. The gastrointestinal series was repeated twice but failed to reveal evidence of a jejunal ulcer. A small solid round mass about 2 to 3 cm. in diameter was revealed by chest roentgenogram to be behind the heart on the left side. At operation it was found to be a carcinoma of the lung. The lung was removed. After operation the epigastric pain was relieved completely. In another patient right-sided abdominal pain was the only complaint. A gastrointestinal series, gallbladder series and barium enema were done on three occasions over a period of twelve months. Only at the last examination was a roentgenogram of the chest taken. It revealed an extensive central type carcinoma of the right lung. At exploratory thoracotomy the lung carcinoma proved nonresectable. A biopsy was taken and confirmed the diagnosis. The only other procedure carried out was a division of the phrenic nerve. The patient was completely relieved of abdominal pain. The histories of the other patients are much the same. Therefore, particular attention is called to abdominal pain that may be referred from carcinoma of the lung even when there are no pulmonary symptoms. The lung cancer in such patients may or may not be operable.

More often than not a malignancy in the lung in an aged person first manifests itself as an acute inflammatory process. Any diagnosis of a "virus," "atypical" or "unresolved" pneumonia must be regarded with great caution and the patient should be followed carefully by roentgenography until complete resolution is reached. Repeated so-called "chest colds" also should be regarded with suspicion. If any doubt exists further studies to rule out a malignancy are

essential. Similarly, many so-called lung abscesses in elderly people are the result of stagnation and suppuration distal to a growth in the bronchus, or the abscess may represent a degenerated peripheral carcinoma that has shelled out and become infected, thus producing an abscess in a carcinoma. If malignancy cannot be proved excision is the treatment of choice since only by this method can a tissue diagnosis be made by microscopic findings.

A type of tumor receiving recent attention is pulmonary adenomatosis or terminal bronchiolar or "alveolar cell" carcinoma. The disease is relatively rare but when present becomes a difficult diagnostic problem. These tumors are classified into a) multiple nodular and b) diffuse or pneumonic (11). Their clinical manifestations are protean and many produce symptoms and signs suggesting an acute inflammatory process. Radiographically they often present a baffling problem. The multiple nodular kind can be easily confused with metastatic lesions or bronchiolar pneumonia, whereas the pneumonic type usually shows a complete lobar consolidation indistinguishable roentgenographically from lobar pneumonia. Abbott (14) reported that diffuse pulmonary adenomatosis though histologically benign can kill by suffocation. Another rare neoplastic disease of the lung is lymphangitic carcinomatosis of the lungs. It is a diffuse lymphatic infiltration of both lungs by metastasis. Hauser (13) in a review of the literature and a report of six more cases related that the most common type is bronchogenic carcinoma. The primary neoplasm may be located in any viscera where metastasis to the lungs is possible. The most constant clinical feature of this condition is dyspnea. A roentgenogram of the chest reveals fine, thin, stringy lines fanning out from the hilum (13).

The value of mass chest roentgenographic surveys has long been a subject of controversy. Gowen (12), in a report on a group of 156,724 persons screened routinely and representing all age groups, wrote that 307 showed findings sug-

gestive of chest malignancy. A follow-up of these suspects led to the finding of only fourteen proved cases. Thirteen of these were forty-five years old and over. Even though the positive yield is low the routine mass roentgen ray studies and the routine chest roentgenograms of all hospital admissions afford the best method of detecting early lung cancer.

The gamut of diagnostic studies used in cases suspected of carcinoma of the lung has been relatively standardized and accepted as routine by most workers in this field. It is well to re-emphasize that of all the different aids in diagnosis, chest roentgenograms and bronchoscopy are the most important and their combined use results in a correct positive diagnosis in a high percentage of patients thus studied. Many are a clinical rather than a tissue diagnosis. The number of tissue diagnoses made by bronchoscopic biopsy varies with different authors from 41 per cent by Ochsner (15) to 78 per cent by Hollinger (16). The greater the percentage of tissue diagnosis of carcinoma by bronchoscopic biopsy, the greater the relative chances that the tumor is nonresectable. When the tumor becomes large enough to be diagnosed by bronchoscopic biopsy it has often invaded the adjacent hilar structures or has metastasized. On the other hand, lesions arising in the main bronchi and their main branches are easily accessible to early bronchoscopic detection and biopsy. Bronchoscopy reveals the correct clinical diagnosis much more frequently than it does tissue diagnosis by biopsy.

Cell studies of the sputum and bronchoscopic aspiration are an important adjunct in the diagnosis of lung cancer, the latter naturally giving a higher percentage of positive results. Liebow et al. (7) reported that the bronchial smear method is roughly twice as sensitive as the sputum smear method, but the incidence of false positive results also seems to be twice as great. They also believed that most positive results are obtained from central tumors whereas peripheral tumors yield negative findings. A notable excep-

tion to the latter is pulmonary adenomatosis or terminal bronchiolar carcinoma, where there is a strong tendency to profuse exfoliation (11).

Bronchography is of limited use in detecting carcinoma of the lung. Occasionally it will reveal a stenotic or completely occluded bronchus, which in the presence of a questionable bronchoscopic finding and a strong clinical suspicion of carcinoma makes it an important finding, particularly if one can be certain that it does not represent merely the absence of filling without an actual lesion. When suspecting carcinoma of the lung, if all the bronchi can be shown to be normal or if bronchiectasis is proved the diagnosis is less likely to be cancer.

Puncture or needle biopsy of the lung is to be condemned in the ordinary study of a patient suspected of having carcinoma of the lung. The dangers of a spread of the lesion along the needle tract are too great to warrant its use. Its only justification appears to be in patients who are clinically judged to be inoperable. Then an exploratory needling is warranted in order that a definite diagnosis be made.

The patient over forty who has a lesion suspected of being cancer, but where a definite tissue diagnosis cannot be made, should be subjected to exploratory thoracotomy without delay. Thoracic exploration is relatively safe and should be regarded as a last but most important method of arriving at a diagnosis. One cannot over-emphasize the importance of advising early exploration to patients who have pulmonary lesions that are suspicious of cancer but where a diagnosis cannot be made by usual studies. It is the sad experience of most thoracic surgeons to see patient after patient with inoperable or non-resectable lesions where the history invariably reveals a long delay by the patient or his physicians before exploration is advised or carried out. Early diagnosis and excision is by no means the whole answer to the cancer problem. Other factors determine the curability or the period of longevity after operation, but so long as these other factors are not known it is certain that the

earlier the lesion is resected the greater will be the longevity of the patient.

It is the important duty of every physician dealing with the cancer problem to search intensely for any clinical or laboratory evidence of inoperability. Every effort should be made to eliminate the added risk of an unnecessary exploratory thoracotomy. Prior to operation a careful search should be made for evidences of spread beyond the confines of the lung. Pleural effusion of any extent, whether hemorrhagic or not, is usually an indication of pleural metastasis and hence of inoperability. There is a possibility that small effusions in the presence of carcinoma may be nonmalignant and caused by venous stasis from blockage or by infection. If present, fluid should be aspirated and centrifuged for cell studies. The presence of malignant cells, of course, leaves no doubt as to the inoperability of the case. Evidence of distant metastasis should be investigated thoroughly. Any suspected palpable supraclavicular node or an enlarged lymph node in any location should be subjected to biopsy before performing a thoracotomy. Hoarseness of the voice if caused by vocal cord paralysis is an important sign. Such paralysis is almost always on the left side, since the recurrent laryngeal nerve on the left branches from the vagus nerve at the level of the inferior border of the arch of the aorta and therefore is subject to invasion by tumor because of its long course in the thorax. On the right side the recurrent laryngeal nerve is not truly within the thorax. Similarly, phrenic nerve paralysis should be looked for by physical examination, fluoroscopy and radiography. The finding characteristically is one of paradoxical respiration, the paralyzed diaphragm moving up on inspiration instead of down as in the normal diaphragm. There are those who dismiss these nerve involvements as not being absolute contraindications of surgical intervention and cite examples where excisional surgery was possible, especially in cases showing phrenic nerve involvement. This is conceivable when there is only a localized area of involvement of the nerve; how-

ever, in such instances the possibility of successful resection is extremely low.

The subject of prognosis in carcinoma of the lung, whether treated or untreated, still presents a pessimistic outlook. As in all other malignancies originating from one focus, many patients with carcinoma of the lung can be cured if discovered before the lesion extends beyond the confines of the lung itself. Ochsner (5) has found one-third to be nonresectable because of the involvement of vital structures. In the same series he found 54.6 per cent of the resected group alive at the end of six months whereas in the non-resected group only 16.4 per cent were living. At the end of two years this figure was 25.9 and 1.5 per cent, respectively, and none of the nonresected group survived three years.

The treatment of carcinoma of the lung is fortunately rather standardized in the form of excisional surgery with removal of the mediastinal glands. It is the only treatment giving some hope of cure. Radiotherapy is reserved as palliation to inoperable or nonresectable cases. Modern improved technics in roentgen ray therapy, such as the rotation principle, grid therapy and supervoltage therapy have helped allay the distress that these patients endure at the end of their course of illness.

There are no authentic figures available for the results of roentgen ray therapy in confirmed localized carcinoma of the lung. (Proved localization of the carcinoma can be revealed only by exploratory thoracotomy. There is no recorded series of patients proved to have localized operable cancer of the lung by open thoracotomy where pulmonary resection was withheld in favor of treatment by intensive roentgen ray therapy.) However, it is evident that if there has been distant metastasis roentgen ray therapy is useless. If there is no distant metastasis and the tumor is inoperable because of localized extension into adjacent organs, the chances of help by roentgen ray therapy are greatly enhanced. This is thought to be especially true if the cancer is anaplastic.

Resection in carcinoma of the lung usually implies total pneumonectomy with removal of the lymph node bearing tissues of the mediastinum on the side of operation. This includes the perihilar, carinal, periesophageal and peritracheal groups of nodes. If there is evidence of diffuse gross involvement of the mediastinal nodes, resection of any kind can hardly be justified except to remove a carcinomatous abscess and thus partially relieve the pain and distress. When the growth involves the heart, the vena cava or the esophagus it is usually nonresectable. However, when the tumor invasion is localized and no distant metastasis has occurred it may be possible and worthwhile to resect the area of local invasion together with the lung. In one patient the superior vena cava was invaded by the growth. It was possible to resect about one-half the diameter of the vena cava over most of its length, thus removing the disease and preserving the blood flow in the vena cava. Portions of the auricle have been resected on a number of occasions and in two instances the patients survived two and two and a half years, respectively, after surgery. If the disease were detected earlier such extensive and desperate resections would not be necessary and it would be reflected in a lower hospital mortality rate and undoubtedly a higher five year survival rate.

Carcinoma of the lung presents a challenge to both the medical profession and to the general public. The "silent phase" where symptoms are absent or thought to be absent must be reduced in length or eliminated by the development of better diagnostic methods or more careful search for subjective and objective symptoms and findings. The patient and physician should recognize the danger of chronic pulmonary complaints and such complaints should be investigated thoroughly. The so-called "cigarette cough" should not be looked upon as a benign innocent symptom. Frequent chest roentgenograms should be encouraged. Chest roentgenograms of every adult hospital admission should be the goal. Mass chest roentgen ray

surveys should be increased since at this time chest roentgenography is the best means of detecting carcinoma of the lung. Until other factors influencing carcinoma are known early diagnosis and early surgical excision offer the best method for reducing the operative mortality and increasing the postoperative longevity.

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FEDERAL STUDY ESTIMATES 20% OF MEDICAL CARE PAID BY INSURANCE

The AMA Washington Letter, No. 100

A Social Security Administration study of voluntary health insurance in 1953 discloses about 20% of all medical care costs were paid by health plans. The study, which is part of a more extensive survey covering 1948-53 to be published by the agency next month, estimates the 1953 private medical bill at \$9,866,000,000 and payments for benefits at \$1,919,200,000. Other statistics: (1) expenditures for hospital services alone were covered to the extent of 41.4%, and physicians' services alone were covered to the extent of 20.7%; (2) physicians' bills accounted for less than a third (28.6%) of all private medical costs, while hospital bills made up 29%; medicines and appliances, 22%; dentists' fees, 9.6%; other professional services, 5.7%; and health insurance, 4.9%.

PHS EXPANDS AND REORGANIZES COMMISSIONED RESERVE

The AMA Washington Letter, No. 100

A major reorganization and expansion of the Commissioned Reserve of the Public Health Service is now under way. Plans call for the commissioning of an additional 2,000 reserve officers by next June 30, and another 3,000 during the ensuing fiscal year. Action comes as the result of extensive new defense responsibilities assigned to PHS by the Federal Civil Defense Administration. Also scheduled is an expansion of research in disaster health problems and development of a program to reinforce state and local health departments in time of national crisis.

Officers of the emergency reserve will be called to active duty without their consent only in the case of a national emergency, but may request active duty at any time, and will be considered for available assignments. Initial emphasis will be on the commissioning of physicians, dentists, sanitary engineers and nurses, followed by training of officers in health problems associated with atomic, biological and chemical warfare.

Component Medical Societies

ALLEGANY-GARRETT COUNTY MEDICAL SOCIETY

LESLIE E. DAUGHERTY, M.D.

Journal Representative

Dr. Leslie E. Daugherty, of Cumberland, Maryland was guest speaker at a banquet and meeting of the Mineral Hardy Hampshire County Medical Society, at Moorefield, West Virginia, on Thursday, October 28, 1954. The meeting was held at the McNeil Hotel.

Dr. Daugherty's subject was "Progress and Problems in Ophthalmology."

The Allegany-Garrett County Medical Society held its last meeting of the year, on December 2nd in the Grand Ball Room of the Fort Cumberland Hotel.

There were thirty-two members and their wives present at the Banquet, which preceded the meeting. This is the first meeting of both physicians and their wives in over thirty-four years. The last being held in Grantsville, in 1921.

Following the banquet, the wives retired to the social rooms and discussed the organization of a Woman's Auxiliary. This meeting was presided over by temporary chairwoman, Mrs. Leland B. Ransom. A communication was read by Mrs. Leslie E. Daugherty, from Mrs. Gerald W. LeVan, Boonsboro, Md. outlining procedure and objectives of the Woman's Auxiliary. Motions were then made to reconvene, to map ways and means to establish a permanent organization.

The feature speaker before the Medical Society, was Dr. Murray McCaslin, Professor of Ophthalmology, of the University of Pittsburgh Medical School. Dr. McCaslin spoke on the relationship of eye findings in general medicine, illustrated by colored slides. Following this, Dr. Wm. S. Love, Professor of Medicine and head of the Department of Cardiology, of the University of Maryland Medical School, outlined activities of the Maryland Heart Association.

Resolutions were then drawn to the effect, that

the Medical Society endorses the Maryland Heart Association, but does not lend its name to public announcements, relative to heart clinics or to other clinics held in Allegany and Garrett Counties.

The Society will hold the Annual Election of Officers in January, 1955.

BALTIMORE CITY MEDICAL SOCIETY

CONRAD ACTON, M.D.

Journal Representative

The Executive Board for 1954 met in November and considered a variety of subjects of more or less general interest: The Federal Reinsurance Program, considered by some to be a back door to socialized medicine, is to be watched. Increased rate of medical liability insurance is to be investigated with regard to different carriers. Change of meeting time, proposed for the purpose of benefitting general practitioners by starting later, after the probable end of evening office hours, is to be investigated by questionnaire. Public relations pamphlets were approved for purchase and distribution.

At the December Meeting, the Reports of Committees were submitted as usual, and were either accepted, or referred to the Executive Board for consideration where recommendations had been made. The slate of officers proposed by the Nominating Committee was unanimously elected. Gavel was presented by Dr. Amos R. Koontz, president-elect, with evident satisfaction to Drs. Wetherbee Fort and Lewis P. Gundry in token of their service as presidents of the Society.

The speaker on December Third was Dr. Walter C. Alvarez, Emeritus Professor of Medicine at the Mayo Clinic and currently editor of "Geriatrics." He spoke on "Two Main Types of Nervous Trouble" to a capacity audience. Many had heard him before and came in anticipation. He was never better. The series of clinical examples from his vast experience was a vivid one. Each dramatically supported his theme that autonomic disturbances should be considered paranoid equivalents if the patients had psychotics in their family trees. He felt that patients

who survived the many clinical investigations their complaints invited could be reassured that they had gone as far as they would and need not fear psychosis. He likened these persons to those with "Illness due to being caught in a trap" of which he has written.



BALTIMORE COUNTY MEDICAL ASSOCIATION

WILLIAM A. PILLSBURY, M.D.

Journal Representative

The December meeting of the Baltimore County Medical Association was held December 15 at the Rosewood State Training School. Dr. George W. Smith, Associate Professor of Neurosurgery, Johns Hopkins Hospital presented the Lawrence Moon Biedl syndrome, and Dr. David Clark, Associate Professor of Neurology, Johns Hopkins Hospital, gave a case presentation.

The following officers were elected for the year 1955: *President*, Dr. Thomas E. Wheeler, Randallstown; *Vice-President*, Dr. Louis Dalmau, Pikesville; *Secretary-Treasurer*, Dr. Clarence E. McWilliams, Jr., Reisterstown. Delegates and Alternates to the Medical and Chirurgical Faculty of Maryland were elected as follows: *Delegates*, Dr. Melvin E. Davis, Chairman; Dr. George S. M. Kieffer, and Dr. Charles F. O'Donnell; *Alternates*, Dr. David Andrew, Dr. George Urban, and Dr. Clewell Howell.

Dr. Pierson M. Checket was elected an associate member of the association.

CARROLL COUNTY MEDICAL SOCIETY

WILLIAM L. STEWART, M.D.

Journal Representative

A regular meeting of the Carroll County Medical Society was held at the Hoffman Inn, Westminster, on November 17, 1954. Eighteen members and four guests were present.

Our new County Health Officer, Dr. George Schochet, was introduced and welcomed at this meeting.

A very interesting film on hypertension was shown

by our local Wyeth representative. This film was made at the meeting of the American College of Physicians in Philadelphia earlier this year and was sent via closed circuit TV to cities throughout the country. The members of our Society were greatly impressed by this method of teaching.

DORCHESTER COUNTY MEDICAL SOCIETY

ALFRED R. MARYANOV, M.D.

Journal Representative

As it is our custom, the regular meeting of the Dorchester County Medical Society for the month of December was held at the Cambridge Country Club on December 15, 1954. This meeting was for the purpose of electing new officers for the ensuing year. The business meeting was preceded by an excellent dinner. Officers elected were as follows: *President*, Dr. Eldridge E. Wolff; *Vice-President*, Dr. George Currier; *Secretary-Treasurer*, Dr. Lawrence Maryanov; *Delegate*, Dr. Frederick A. Miller; *Alternate Delegate*, Dr. W. H. Hanks; *The Board of Censors*, Dr. John Mace (1957), Dr. Lewis Burdette (1956), Dr. Lawrence Maryanov (1955).

HARFORD COUNTY MEDICAL SOCIETY

FREDERICK J. HATEM, M.D.

Journal Representative

A meeting of the Harford County Medical Society was held on December 16, 1954 at Dr. Foley's Bayou Apartments with sixteen members present.

The following items of business were transacted:

1. The County Society approved use of standard insurance forms already approved by the Harford Memorial Hospital Staff.
2. A donation of \$25.00 was granted to the National Society for Medical Research.
3. Drs. Rodman and Sidwell were appointed as local representatives of the Heart association to approve the use of Bicillin in certain cases for the prevention of Rheumatic Fever.
4. It was decided that \$10.00 a day be allotted toward expenses of delegates while attending meetings as representatives of the Society.

5. Election of Officers:

President: Brown McDonald*Vice-President:* Frederick J. Hatem*Sec.-Treas.:* Phillip Heuman*Delegate:* Ralph Horky*Alternate to Delegate:* Charles Stewart

6. A vote of thanks was given to Dr. Barthel for the fine job he has done as president for the past three years.

At a meeting on November 18, 1954, Dr. Horky, a member of the Governor's committee for revision of the adoption laws, presented a letter to be sent to other component societies and an alternate proposal for revision of the adoption law in contradistinction to the amendment proposed by the Governor's committee. The alternate proposal would permit a third person to aid and abet in adoption with definite limitations, restrictions and requirements. This was approved by the County Society.

MONTGOMERY COUNTY MEDICAL SOCIETY

DEWITT E. DELAWTER, M.D.

Journal Representative

The December meeting of the Montgomery County Medical Society was held at the Clinical Center of the National Institutes of Health, Bethesda, Maryland, December 21, 1954. A movie was shown on the "Clinical Use of Hemodialysis" (The Artificial Kidney). The speaker was Dr. George E. Schreiner, Director of Renal Clinic, Georgetown University Hospital; Instructor of Medicine, Georgetown University School of Medicine.

The February meeting of the Society is to be held in the New County Building, Rockville, Maryland. The program is planned to inform our membership about the ancillary facilities available to the physicians in the County.

The Medical Society has been issuing a monthly bulletin which consists of one to three mimeographed pages. It includes information and announcements of medical interest. In this way happenings are reported and the members kept informed. It has proved very popular and particularly informative to those members who are forced to miss a monthly meeting. This project is being mentioned in the JOURNAL in case other County Societies would be interested in such a program. For a mailing list of ap-

proximately 275 members, the total cost is \$20.00 per issue.

The Clinical Center of the National Institutes of Health holds regular case presentation conferences the second and fourth Thursdays of each month to which our Society members are invited. The subjects to be discussed are not announced far enough in advance to be contained in the Bulletin. Any interested physician may phone National Institutes of Health the week of the conference for that information.

The Montgomery County Alcoholic Rehabilitation Clinic is held every Tuesday evening at 7:00 P.M. in the Health Department in Rockville. Dr. John Fort, psychiatrist on the staff at Chestnut Lodge is the director. Appointments and referrals can be made by telephoning Mrs. Martha Bussard, the clinic secretary at Poplar 2-2121, Extension 417. On application, the patient is seen first by one of the psychiatric social workers and plans worked out for the most appropriate treatment. A member of the clinic staff attends the regular monthly meeting of the local committee on Alcohol Studies, of which Dr. George Sharpe and Dr. Aaron Traum are members, to present the current work of the clinic and answer questions about it.

PRINCE GEORGE'S COUNTY MEDICAL SOCIETY

BENJAMIN S. MILLER, M.D.

Journal Representative

The most important thing that happened to us this month was our annual election of officers. Here is the 1955 list: Dr. Benjamin S. Miller, Mt. Rainier, *President*; Dr. William B. Hagan, Mt. Rainier, *Vice-President*; Dr. Albert Roth, East Riverdale, *Corresponding Secretary*; Dr. Richard D. Bauer, Hyattsville, *Recording Secretary*; Dr. John S. Haught, Mt. Rainier, *Treasurer*; Dr. Waldo B. Moyers, Mt. Rainier, and Dr. Samuel Sugar, Mt. Rainier, *Delegates*; Dr. James Sasscer, Upper Marlboro, and Dr. Paul Van Natta, Suitland, *Alternates*.

General news is a little scarce this time. Our Annual Banquet and Dance was held last month in place of a regular meeting. The affair took place at the Shoreham Hotel in Washington, D.C. and was

well attended. This year, for the first time, even the members had to pay for their own tickets since the Banquet Fund was allocated to send deserving County girls to area nursing schools. Two, so far, have been awarded full three-year scholarships.

Now that this County is a part of the Maryland

Heart Association, and in response to an invitation by the President, Dr. Love, we are setting up a Prince George's County Chapter with Dr. Waldo B. Moyers as Chairman and Drs. Deitz, Christensen, Maloney, Van Natta, and McCeney as a permanent committee.

LABOR SECRETARY PROPOSES HEALTH INSURANCE EXPANSION

The AMA Washington Letter, No. 99

Secretary of Labor Joseph P. Mitchell, joining in the public discussion of the administration's health and medical goals, advocates extension of health plans and continued development of medical education. Mr. Mitchell made known his views in an address to the anniversary dinner of the Health Insurance Plan of Greater New York (HIP).

Great strides have been made in voluntary health insurance, providing "some degree of protection" to American families, he said, but "much less has been done in terms of comprehensive health programs which provide complete medical and surgical care in the hospital and home."

The Secretary said there was no doubt in his mind that the American people are determined "to proceed on all fronts to establish adequate systems of health insurance." He described HIP as "a good example of the development of a comprehensive system of medical care and hospitalization through a form of pre-payment which can be met by the average family." In addition to the widest possible medical care at the lowest possible cost, the country must have an adequate number of physicians, nurses and technicians as well as adequate hospitals, laboratories and medical research centers, Mr. Mitchell stated. He also reminded that the administration would submit to the next Congress a plan for health insurance for federal civilian employees.

Necrology

A. S. CHALFANT, M.D., *Chairman*

Memoir Committee



J. M. H. ROWLAND, M.D.*

J. M. H. Rowland, M.D.
1867-1954

Dr. J. M. H. Rowland having been a member of the Council of the Medical and Chirurgical Faculty and also President of the Association in 1931 to 1932 the Council requested Dr. Louis H. Douglass to write a resolution on his death.

The following resolution, was adopted by the Council and spread on the minutes of its meeting of December 14.

The time must come when a man completes his tour of duty in this world, yet when he is called to join the "innumerable caravan" a void is left in the hearts and minds of those who knew and loved him.

So it is with Dr. James M. H. Rowland, physician

* The family of Dr. J. M. H. Rowland presented to the Medical and Chirurgical Faculty this portrait which Mr. Carl D. Clarke copied from the T. C. Corner original that hangs in the University of Maryland Medical School.

and teacher, a man so long and so intimately associated with medicine in Maryland. By his efforts and ability Dr. Rowland became one of the outstanding figures in medicine in the State. He held many important offices in the Medical and Chirurgical Faculty and in the School of Medicine of the University of Maryland. He served as President of the former and as Professor of Obstetrics and Dean of the latter. Whatever position he held he filled with honored distinction.

Dr. Rowland will be best remembered as a teacher. It was in this field that his greatest interest lay and it was in this field that he reached heights that few attain. Though not an orator he impressed students with his sincerity, his seasoned judgment and his talent for making difficult concepts easy to master.

Dr. Rowland carried his many honors well for he was a humble man more interested in the advancement of his associates than in his own success.

Dr. Rowland lived a full and useful life and made this world a better place in which to live. Though saddened by his death, his family and friends are thankful to the Divine Creator that he was given to remain with them these many years.

Francis Frederic Schwentker, M.D.*
1904-1954

Dr. Francis F. Schwentker, a member of the Baltimore City Medical Society and of the Maryland Medical and Chirurgical Faculty since 1948, after an illness of several months, was found dead on 8 November 1954, in his office at the Harriet Lane Home of The Johns Hopkins Hospital. He was in his fifty-first year.

Dr. Schwentker was born 13 February 1904 in Schenectady, New York. His father came there from Germany in his youth, and, with Dr. Schwentker's brother and sister, still lives there. After finishing

* Submitted by A. S. Chalfant, M.D., Chairman, Memoir Committee.

high school in Albany he received a B.S. from Union College in Schenectady in 1925 and an M.D. from The Johns Hopkins University in 1929. After an internship and Assistant Residency from 1929 to 1931 in Harriet Lane, he went to study psittacine viruses with Dr. Thomas M. Rivers at the Rockefeller Institute in New York from 1931 to 1934. In 1932 he was married to Madelyn E. Crockett, a graduate of The Hopkins School of Nursing. His wife and their three children; Frederic Noel, Ann Cole, and Edwards Park survive him.

He returned to Baltimore to be Resident in Pediatrics at the Harriet Lane in 1934-35 and moved from there to the old Sydenham Hospital to continue his study of infectious disease as Assistant Director and later Director of Medical Research of the Baltimore City Health Department from 1935 to 1938. During these years he was active in developing the underlying principles and practical applications of the sulfonamides in infectious disease states.

Selected as a staff member of the International Health Division of the Rockefeller Foundation, he was sent to Roumania from 1938 to 1940 on an epidemiologic study of streptococcal flora in scarlet fever outbreaks in association with Drs. John H. Janney and John E. Gordon. When World War II started, he brought his data and cultures back to New York. He had barely finished the report of the work when bombs fell in Hawaii on 7 December 1941.

Consultant in Epidemiology to the Secretary of War since 1940, he worked on problems at military camps and stations until March 1942 when he went on active duty. Commissioned Lieutenant Commander, MC, USNR, he was assigned as Executive

Officer in NAMRU #2, commanded by Captain Thomas M. Rivers. After a shakedown year at Bainbridge he went with the unit to Guam and was responsible for the administration of the unit in the important work it did in solving the health problems of the task forces in various regions of the Pacific. Promoted to commander, he was separated from the Navy in December 1945. In February 1946 he returned to Hopkins and in June succeeded Dr. Edwards A. Park as Professor of Pediatrics and Head of the Department—the positions he held until illness led to his leave of absence in 1954.

He received a Doctor of Science degree from Union College in 1949 and in the next year spent two months in Germany under the auspices of the Unitarian Service Committee aiding in the reorganization of the medical teaching program there. In 1952 he was in England as Exchange Professor at the Children's Division of Guy's Hospital in London.

On the Editorial Board of "Pediatrics," he was a member of many societies including Alpha Kappa Kappa, Sigma Xi, American Pediatric Society, American Academy of Pediatrics, Society for Pediatric Research, Society of American Bacteriologists, Interurban Clinical Club, and the Association of American Physicians. He was an author of more than thirty published articles.

The onset of his illness in late 1953 was insidious. He improved under medical care in 1954 until a fall in August caused multiple skull fractures. Recovering from this, he was engaged in a writing project with Dr. Horace Hodes prior to his sudden and untimely death. He is remembered by many friends as a quiet, helpful, earnest man—sorely missed in the fellowship he served so well.

FELLOWSHIP STIPENDS NOT TAXABLE, COURT RULES

The AMA Washington Letter, No. 99

In a decision affecting 32,000 foundations and many thousands of physicians, scientists, and scholars, the Tax Court of the United States has held that research and study grants from philanthropic organizations are not taxable. The decision, which reverses a 1951 finding of the Commissioner of Internal Revenue, holds that fellowships are gifts, and therefore are not taxable as income. Previously, grants were regarded as income, and taxable as such. The Tax Court ruling came as the result of a test case brought by George Winchester Stone, Jr., a Washington (D.C.) professor, in regard to a Guggenheim Foundation literature grant.



Library



"Books shall be thy companions; bookcases and shelves, thy pleasure-nooks and gardens." *ibn Tibbon*

OBESITY

LOUIS KRAUSE, M.D.*

Obesity undoubtedly has been with us not longer than the time when man took up a sedentary type of living. It is very unlikely that when he was a nomad or given to the chase to get his food, that obesity could have existed to any extent. When he began "living in the land of the sown" and food was available with greater regularity for the most part, then activity was more restricted. It was then that the incidence of obesity increased.

In primitive communities the cost of a wife was directly in proportion to her weight. In one area in which the writer was, the average cost of a wife who was lean and dehydrated was \$10.00 and the top price of the daughter of the Sheik who had large flocks and who could be well nourished would go up to \$40.00.

Today, we look upon obesity not as a socioeconomic problem, but more as a medical hazard. Many conditions are aggravated and in some instances precipitated by excessive weight. There is an interesting reference in the 4th chapter of the 1st Book of Samuel, verse 18 regarding Eli, "And it came to pass, when he made mention of the ark of God, that he fell from off the seat backward by the side of the gate, and his neck brake, and he died: for he was an old man, and heavy." The incident responsible for his fall also brought on his daughter-in-law's labor, according to the story.

We are also aware of the reference to the jovial temperament of the fat man in contrast to the lean man in Shakespeare's reference to Cassius having a "lean and hungry look, such men are dangerous." The relationship of excessive fat both on the body and in our diet in causing vascular disease is still to be explained. For the pursuit of this interesting subject, the following list of books are recommended.

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LIBRARY CHATTER

MARY EMILY BERGE*

We so much enjoyed compiling the bibliography for Dr. Krause's article this month that we can't resist adding a foot note to it. In the preface to Leonard Williams' book on obesity he says that his chief sources of inspiration and stimulation were two little works by William Wadd. He adds that "Comments on Corpulency," published in 1829, which is much the more interesting, is very rare, and mentions its medical interest and literary curiosity. As you can see from the bibliography, we have a copy in the Faculty Library, presented in 1947 by Dr. Julius Friedenwald. It is extremely entertaining, written with wit and humor. Wadd had a predilection for puns and a knack for drawing. The sketches which help to enliven the book were all made by the author.

The famous Banting "Letter on Corpulence" also repays the reader with entertainment and amusement. Banting says, "Although no very great size or weight, still I could not stoop to tie my shoe... I have been compelled to go down stairs slowly backwards to save the jar of increased weight upon the ankle and knee joints, and been obliged to puff and blow with every slight exertion." This fourth edition under the heading, "Correspondence," cites testimonials from grateful folk who have been "reduced in ponderosity" since following the so-called Banting system.

Of course, the Banting diet was originally laid out for Banting by a physician whom he had consulted because of increasing deafness, William Harvey. Harvey's own book was published some time later. We were interested to see that the copy in the Faculty Library is inscribed on the fly-leaf to "W. Banting, Esq. from the author with his regards." This copy was presented to the library by Dr. Charles O'Donovan, grandfather of the present Faculty member.

Enough, we have been accused of dwelling too much in the past so we shall come back, or come forward, to the present.

* Assistant Librarian.

For the benefit of those interested Faculty Members who have asked for volumes of the "Nervous and Mental Disease Monograph Series," we now have an almost complete set. No. 2 and no. 63 are the two volumes we have not obtained. If anyone has a copy of either of these he would like to present to the library we should be very grateful as each is now out of print. This series is not to be confused with the research publications of the Association for Research in Nervous and Mental Diseases of which we do have a complete set, including all the ones that are out of print.

Dr. Georgeanna Seegar Jones, member of the Faculty and assistant professor of gynecology at Johns Hopkins, has very kindly given the library a copy of her new book. "The Management of Endocrine Disorders of Menstruation and Fertility" was published by Thomas late in 1954. Dr. Jones says in her foreword, "This book is written for the medical student and physician, be he specialist or practitioner, who wishes in one place a brief review of the endocrine physiology of menstruation and fertility, as well as a survey of the principal endocrine disorders affecting these functions." We are grateful to Dr. Jones and are sure other Faculty members will find her book of great value.

Dr. Edward F. Kerman, another Faculty member from Baltimore City, has presented the library with a copy of his new book, "What is Electroshock Therapy?". This was also published late in 1954, by the Exposition Press. Written in question and answer form, the book gives a full description of electroshock treatment for the general public as well as members of the medical profession. It is Dr. Kerman's hope that it will clear up the many doubts and misconceptions which still prevail.

"Peripheral circulation in man" by Wolstenholme, which was reviewed in the October Journal, has been added to the library.

"Diseases of muscle; a study in pathology" by Raymond D. Adams, D. Denny-Brown and Carl M. Pearson, published by Hoeber, is another recent addition, which should be of great value. "Clinical and pathological findings are correlated in an effort to reach an integrated concept of the mechanism of muscle diseases." Neurologists, surgeons, internists and pathologists will all be interested in this volume.

Books on electrocardiography are always in demand. We have two new ones, "Electrocardiography"

by E. Grey Dimond, published in 1954 by Mosby, and the 3rd edition of Emanuel Goldberger's book. This edition includes a new section on vectorcardiography." The full title is "Unipolar lead electrocardiography and vectorcardiography." It was published in 1953 by Lea and Febiger.

Grune and Stratton published, for the American Heart Association, the report of the committee on anticoagulants, in 1954. By Irving S. Wright, Charles D. Marple, and Dorothy F. Beck, it is called "Myocardial infarction; its clinical manifestations and treatment with anticoagulants." Representing a study of 1031 cases and the committee's findings in the matter under study, it should be of absorbing interest. Grune and Stratton are also the publishers of Alexander Wiener's "An Rh-Hr syllabus." This little book presents "an up-to-date summary of the subject in a compact, easily understandable form."

The library is the proud possessor of several new books on anesthesia, ranging from Stuart C. Cullen's, "Anesthesia in general practice," the 4th edition published by the Year Book publishers in 1954, to the monumental work by John J. Bonica on "The Management of Pain" published by Lea & Febiger

in 1953. The author says in the preface that he wanted to "present within one volume a concise but complete discussion of the fundamental aspects of pain, the various diseases and disorders in which pain constitutes a major problem, and the methods employed in its management, with special emphasis on the use of analgesic block as an aid in the diagnosis, prognosis, and therapy." We also have the 3rd, 1954 edition of the A. M. A. text, "Fundamentals of Anesthesia."

Another new edition is the 6th, 1953 edition of Horsley and Bigger, "Operative Surgery," published by Mosby.

A particularly interesting statistical study of cancer was published last year by Williams and Wilkins, "Cancer: race and geography" by Paul E. Steiner. It deals with "some etiological, environmental, ethnological, epidemiological, and statistical aspects in Caucasoids, Mongoloids, Negroids, and Mexicans," based on over 35 thousand necropsies performed at Los Angeles County Hospital in the years 1918 to 1947.

All of these titles may be borrowed from the library.

VOCATIONAL REHABILITATION REGULATIONS ISSUED FOR EXPANDED PROGRAM

The AMA Washington Letter, No. 101

Department of Health, Education, and Welfare has issued regulations spelling out details of the expanded vocational rehabilitation program passed by the last Congress (P.L. 565). Regulations cover 11 pages of the Federal Register of December 2, and generally follow the same language as in the law. The program envisions 200,000 rehabilitations a year by 1959 as against the current rate of 60,000.

The regulations require states to coordinate their vocational rehabilitation activities with those of the expanded Hill-Burton program to make sure there is no duplication of rehabilitation facilities. P.L. 482 provides for grants to states not only for hospitals, clinics and nursing homes but also for rehabilitation centers; the last Congress voted \$4 million for these.

Another section of the regulations provides that any rehabilitation facility providing an integrated program of "medical, psychological, social and vocational evaluation and services" must be under the formal supervision of persons licensed to practice medicine and surgery in the state. OVR said this is the first time that this provision has been written into law.

Health Departments

STATE OF MARYLAND DEPARTMENT OF HEALTH

MARK V. ZIEGLER, M.D.*

The Council on Medical Care has from time to time given consideration to ways and means of preventing the continuous mounting cost of prescribed drugs under the Maryland Medical Care Programs. It has advocated strict adherence to prescribing preparations as listed in the U. S. Pharmacopeia and the National Formulary.

The Council in discussing this matter at a recent meeting suggested that a communication be addressed to the Medical and Chirurgical Faculty requesting that the matter of increased cost of drugs under the Medical Care Programs be brought to the attention of the members of the Faculty either directly or through its component Societies.

In 1947, only 14¢ out of every dollar spent on medical care for indigent and medically indigent county residents went for drugs. By 1953-54 this had increased to 35¢ out of every dollar. Conversely, 79¢ out of every dollar went for physicians' services in 1947, while only 59¢ was available for this purpose in 1953-54.

It may be argued that this change was inevitably due to the inflationary trend and the increasing use of expensive antibiotics and similar drugs. This is true enough, but it does not explain the entire situation. For example, physicians wrote an average of 46 prescriptions per 100 calls in 1947, and 88 prescriptions per 100 calls in 1953-54. This can be explained neither by inflation nor antibiotics.

The cold, hard fact remains that the drug costs have risen continuously and last year they absorbed 35% of the budget for the County Medical Care Program. The participating physicians are responsible for some part of the increased drug costs.

The Council feels that the cooperation of the Faculty and its members in efforts to reduce the high percentage of drug costs under the Medical Care Program will be in the public interest.

The Council believes that the participating

physicians will be able to make a distinct contribution in lessening the drug costs by observing the following suggestions in prescribing medications for patients under the Medical Care Programs:

(a) Prescribe U. S. Pharmacopeia and National Formulary Drugs whenever possible.

(b) Exercise caution in prescribing new, expensive and experimental drugs.

(c) Refrain from prescribing the more expensive brand named drugs when the less costly preparations will achieve the same purposes.

(d) Limit the quantities of the prescribed medications to the minimum amount required to attain the desired therapeutic benefits.

(e) Carefully determine the need for authorizing prescription refills.

BALTIMORE CITY HEALTH DEPARTMENT

The Practice of Sanitation—Second Edition

Medical practitioners and health workers in Baltimore and in the State of Maryland will be interested in the latest revision of the book *The Practice of Sanitation*. This volume, first published in 1951, was written jointly by Mr. Edward S. Hopkins, recently retired Principal Associate Engineer in the Baltimore City Bureau of Water Supply and Dr. Wilmer H. Schulze, Director of the Sanitary Section of the Baltimore City Health Department.

The Practice of Sanitation is published by the Williams and Wilkins Company of Baltimore and was developed as a guide in environmental sanitation procedures for the training of physicians seeking to become health officers, for nurses and sanitarians, and for students in sanitary engineering. It brings together the pertinent facts comprising sanitation practice in the United States today. Included are chapters on the administration of sanitation programs, food sanitation, public water supplies, refuse disposal, stream pollution and industrial wastes, air pollution, housing, industrial sanitation, public transportation, insect and rodent control and others.

* Secretary, Council on Medical Care.

STATE OF MARYLAND DEPARTMENT OF HEALTH
MONTHLY COMMUNICABLE DISEASE REPORT

Case Reports Received during 4-week Period, January 1-27, 1955

	CHICKENPOX	DIPHTHERIA	GERMAN MEASLES	HEPATITIS, INFECT.	MEASLES	MENINGITIS, MENINGOCOCCUS	MUMPS	POLIOMYELITIS, PARALYTIC	POLIOMYELITIS, NON-PARALYTIC	ROCKY MT. SPOTTED FEVER	SORE THROAT INCL. SCARLET FEVER	TYPHOID FEVER	UNDULANT FEVER	WHOOPING COUGH	TUBERCULOSIS, RESPIRATORY	SYPHILIS, PRIMARY AND SECONDARY	GONORRHEA	OTHER DISEASES	DEATHS Influenza and pneumonia
Total, 4 weeks																			
Local areas																			
Baltimore County....	81	—	7	—	8	—	19	—	—	—	22	—	—	13	8	—	7	—	8
Anne Arundel.....	11	—	3	—	13	1	4	—	—	—	2	—	—	2	4	—	*	—	2
Howard.....	2	—	—	—	—	—	—	—	—	—	6	—	—	—	2	3	2	—	1
Harford.....	2	—	—	—	—	—	4	—	—	—	—	—	—	—	3	—	1	—	5
Carroll.....	—	—	—	1	1	—	—	—	—	—	1	—	—	2	—	—	—	—	7
Frederick.....	5	—	1	1	—	—	6	—	—	—	179	—	—	—	2	—	1	—	1
Washington.....	—	—	—	—	—	—	—	—	—	—	—	—	—	—	1	—	1	—	3
Allegany.....	20	—	1	—	—	—	—	—	—	—	9	—	—	—	3	—	—	—	1
Garrett.....	5	—	—	—	1	—	—	—	—	—	24	—	—	—	—	—	2	—	—
Montgomery.....	16	—	2	15	36	1	9	—	—	—	72	—	—	—	4	—	2	—	6
Prince George's.....	9	—	—	1	1	—	5	—	—	—	13	—	—	1	12	1	4	—	2
Calvert.....	—	—	—	2	—	—	—	—	—	—	—	—	—	—	—	—	—	—	1
Charles.....	1	—	—	—	—	—	—	—	—	—	1	—	—	1	3	—	1	—	1
Saint Mary's.....	6	—	—	1	2	—	4	—	—	—	—	—	—	14	1	—	—	—	2
Cecil.....	1	—	—	1	—	—	—	—	—	—	1	—	—	2	3	—	—	—	2
Kent.....	12	—	—	—	—	—	3	—	—	—	—	—	—	1	—	—	5	—	3
Queen Anne's.....	—	—	—	—	—	—	—	—	—	—	—	—	—	—	1	—	1	—	1
Caroline.....	—	—	1	—	—	—	3	—	—	—	—	—	—	3	—	—	4	—	—
Talbot.....	—	—	—	—	—	—	—	—	—	—	—	—	—	1	—	—	4	—	—
Dorchester.....	—	—	—	—	—	—	—	—	—	—	—	—	—	—	1	—	6	—	1
Wicomico.....	30	—	—	8	—	—	31	—	—	—	11	—	—	—	2	1	6	e-1	1
Worcester.....	—	—	—	1	—	—	—	—	—	—	—	—	—	—	2	—	1	—	1
Somerset.....	1	—	—	—	—	—	—	—	—	—	1	—	—	—	—	—	1	—	2
Total Counties.....	202	0	15	31	62	2	88	0	0	0	342	0	0	40	52	5	49		51
Baltimore City.....	124	0	11	2	5	1	45	1	0	0	30	0	0	4	85	8	541		27
State																			
Jan. 1-27, 1955.....	326	0	26	33	67	3	133	1	0	0	372	0	0	44	137	13	590		78
Same period 1954.....	614	0	16	50	691	4	371	1	0	0	119	0	0	89	116	18	659		61
5-year median.....	395	5	22	—	430	7	201	1		0	153	1	2	71	158	23	540		60
Cumulative totals																			
State																			
Year 1955 to date....	326	0	26	33	67	3	133	1	0	0	372	0	0	44	137	13	590		78
Same period 1954.....	614	0	16	50	691	4	371	1	0	0	119	0	0	89	116	18	659		61
5-year median.....	395	5	22	—	430	7	201	1		0	153	1	2	71	158	23	540		60

e = encephalomyelitis.

* = psittacosis—1; tularemia—1.

Numerous illustrations of a technical nature and many photographs, some of which were taken in Baltimore, complement the text.

Dr. Schulze, City Health Department coauthor, has been with the Baltimore City Health Department since 1929 when he was appointed Chief of the Division of Chemistry. Prior to this time for ten years he held the position of Assistant Chemist in the Maryland State Department of Health. He was appointed Director of the City Health Department's Bureau of Environmental Hygiene in 1933 and Director of the Sanitary Section in 1939. Through the years he has kept pace with the changing times and has been chiefly instrumental in keeping the non-medical or sanitary services of the City Health Department at a proper level of efficiency.

Through unremitting work and application he has become recognized throughout the country, and also abroad, as an authority in this branch of public health work and the volume attests to his extensive experience in this field.

The book is considered a valuable addition to school and medical libraries and can be an excellent source of reference for those interested in environmental health procedures. It is a 466 page volume and sells at \$8.00.

Huntington Williams, M.D.

Commissioner of Health

U. S. PUBLIC HEALTH SERVICE BOOKLET

The U. S. Public Health Service has published a booklet describing approximately 100 clinical studies now under way or contemplated for the fall and winter period of 1954-55 at the Clinical Center of the National Institutes of Health, Bethesda, Maryland.

The booklet gives information on procedures for referral of patients, and eligibility requirements. To be admitted, a patient must be referred by a physician, and must manifest a specific condition under study by one of the seven Institutes conducting research at the Clinical Center.

Physicians may obtain a copy of the booklet by writing to the Director of the Clinical Center. Future announcements also will be sent upon request whenever new studies are contemplated.

MEDICAL EDUCATION SEEN AT CROSSROADS

America's medical schools face a crisis which can only be resolved by increased public interest and support, according to a 25-cent pamphlet, "The Challenge to Medical Education" just published by the Public Affairs Committee, 22 East 38th Street, New York City.

For additional information, please contact the Public Affairs Committee at the above address.



Blue Cross - Blue Shield



THE HISTORY OF BLUE CROSS

R. H. DABNEY*

There is evidence of the existence of a prepayment health plan on the North American continent as long ago as 1655 in Montreal; similar plans were found in the mining and logging camps of the central Northwest in the 1880's; and there was a plan started in Rockford, Illinois in 1912 that closely resembled our present Blue Cross. However, these isolated early efforts to prepay hospital care were primarily local in nature.

The real prototype of present day Blue Cross came into being in 1929 when a group of school-teachers in Dallas, Texas realized that they as individuals could not save enough to pay hospital bills in an emergency. By a little figuring they found that as a group they could easily pay all the hospital bills they were likely to incur. So they entered into an agreement with the Baylor University Hospital whereby, for \$3.00 per person per semester, each of the teachers was eligible for twenty-one days of hospital care.

The experiment proved a great success. Other hospitals heard of it and followed suit. But in cities having more than one hospital, overlapping and competitive difficulties arose. It immediately became clear that to be successful, any plan would have to include all the hospitals in the area and permit the patient to choose the one he wished. This was the beginning of Blue Cross.

The idea was tried in California in 1932 and in New Jersey the following year. The latter experiment developed so rapidly that after six months the working capital which had been advanced by a

commercial agency was returned and the hospitals took over the management.

From that time to the present, more and more people have come to realize that illness and accidents are unpredictable and that some form of protection against the financial hazards involved is imperative. Membership growth was phenomenal—"Blue Cross" was like a magic phrase. Millions of people were now able to pay their hospital expenses on a personal budgetary basis. The Plan changed many patients from a charity medically indigent status to a medically self-supporting status and at the same time meant more income to the hospitals.

At present, there are eighty-three Blue Cross Plans with 46,000,000 members nationally protected through the cooperation of over 5,800 member hospitals. The eighty-three Plans differ in some respects as to rates charged, amount of protection, and methods of operation, but, in general they follow a common pattern. All are operated on a non-profit basis and their collective aim is to bring complete health protection within the range of every pocket-book of every person in the community. Each Plan has local autonomy but must meet the standards set up by the national Blue Cross Commission and the American Hospital Association. Only by meeting and adhering to these standards of organization and operation may a Plan use the symbol of Blue Cross and so qualify for the integrity, honesty and prestige which it represents.

Maryland Hospital Service, Inc., the Blue Cross Plan serving this State, was incorporated in 1937, and now has over 878,000 subscribers and 40 member hospitals—virtually all of the general hospitals in Maryland. The vast majority of this membership is in employed groups, but others either have direct payment memberships or are enrolled under the new non-group program begun in July.

* Executive Director, Maryland Hospital Service, Inc., Maryland Medical Service, Inc.

Ancillary News

NURSING SECTION

M. RUTH MOUBRAY, R.N., *Executive Secretary,*
Maryland State Nurses Association

PROPOSED CHANGES IN THE PRESENT LAWS OF MARYLAND RELATING TO REGISTRATION OF NURSES AND LICENSED PRACTICAL NURSES*

At the January 1955 session of the General Assembly of Maryland, proposed changes in the present Laws of Maryland Relating to Registration of Nurses and Licensed Practical Nurses are being introduced by the Maryland State Nurses Association, with the approval and support of the Maryland League for Nursing. These proposed amendments include the following:

1. (new) Provision for biennial renewal of registration for registered nurses beginning January 1956 (continuing in the even years); the renewal fee \$2.
2. (Section 300) Change the provision for annual renewal for licensed practical nurses to biennial renewal in January in the odd years; the renewal fee \$2.

Explanation of 1 and 2: Current factual data on nurse power is continuously needed for civil defense purposes and for planning to meet present and future nursing needs in Maryland.

Maryland and Ohio are the only states that do not provide for renewal of registration. Maryland nurses frequently need evidence of registration which they can conveniently carry with them. Under the present law only the original certificate of registration can be issued by the Maryland State Board of Examiners of Nurses, and this is too large to be conveniently carried.

Another important reason for renewal is that Maryland is handicapped in participating in National Inventories of Professional Registered Nurses which are conducted by the American Nurses' Association periodically. This is due to

the fact that current names (for nurses married since their original registration) and current addresses are not available. While the Maryland State Board of Examiners of Nurses participated to the extent of its ability in the 1949 and 1951 inventories, the Board of Examiners has decided that it cannot participate in the 1956 inventory because: (1) it has not been able to maintain a list of names and addresses of professional nurses who are practicing or residing in Maryland; (2) the expense would be too great; (3) too much time would be required; and (4) the information obtained from the previous inventories in Maryland was unsatisfactory.

A further problem is involved. The American Nurses' Association Research and Statistics Unit is giving consideration to a proposal that a Professional Nurse Statistical Registration Area be established. If a sufficient number of states were to join in such a plan by 1956, national inventories would not have to be done again. This new plan would provide for a nation-wide system of nurse statistics based upon comparable and accurate data obtained by state licensing boards since such boards, with the exception of three, collect annually or biennially much of the information needed for state and national purposes. The Maryland State Board of Examiners of Nurses has not considered joining the Professional Nurse Statistical Registration Area since the problems involved in the inventories would be involved in the new plan.

3. (new) Provision for interstate licensure (reciprocity) for licensed practical nurses from other states.

Explanation: Practical nurses, even though licensed in other states, must now take the Maryland examinations to obtain licensure in this state. The present laws contain reciprocity provisions for registered nurses.

* Submitted by the Maryland State Nurses Association.

4. (Section 290) Deletion of the phrase, "is twenty-one (21) years of age."

Explanation: Many nurses graduate and pass their State Board Examinations before they reach twenty-one. However, their certificates of registration cannot be issued until they become twenty-one years of age.

5. (Section 297) Increase of fee for original licensure of practical nurses from \$5 to \$10.

Explanation: It is estimated that the present fees for licensed practical nurses do not offset the costs of examination and procedure.

6. (Section 288) Increase of compensation of Board members from \$5 to \$10 per day.

Explanation: There has been no change in such compensation since 1904 when the original law was passed.

7. (Section 290) Deletion of the phrase, "three years of training."

Explanation: Removal of the time requirement would make it possible for registered nurses to be prepared in a shorter period of time. It would also make it possible for nurses registered in other states who have had courses of less than three years to obtain registration in Maryland.

HARVARD UNIVERSITY SCHOOL OF PUBLIC HEALTH

Announces

PUBLIC HEALTH SCHOLARSHIPS

Scholarships for the Academic Year 1955-56 will be granted to individuals of high professional promise in awards ranging from part tuition to tuition plus a stipend, according to the qualifications and financial needs of the applicants. The Scholarship Funds are limited and are primarily intended for citizens of the United States.

Scholarship applicants must be eligible for admission to the School as a candidate for one of the following degrees: Master of Public Health, Doctor of Public Health, Master of Science in Hygiene, Doctor of Science in Hygiene, Master of Industrial Health.

Scholarships are available to those in the following categories who wish to obtain post-graduate education in the field of public health or in one of the basic sciences related to public health:

1. Physicians, Dentists and Veterinarians
2. Industrial Physicians
3. Public Health Nurses with a college degree and satisfactory field experience
4. Social Workers with a master's degree from an approved school of social work and acceptable experience in the field of medical or psychiatric social work
5. Health Educators with the following background: college degree, training either in health education or in the natural and social sciences; experience in general education or community health work
6. College Graduates who have concentrated in one of the *Natural Sciences* or in *Engineering* (environmental aspects).

A Catalogue of the School, Admission and Scholarship applications, and further information may be obtained by writing the Secretary, Harvard School of Public Health, 55 Shattuck Street, Boston 15, Massachusetts.

Scholarship applicants must return completed admission and scholarship applications to the Harvard School of Public Health by March 1, 1955. Scholarship awards will be announced May 1, 1955.



Woman's Auxiliary Medical and Chirurgical Faculty



MRS. JOHN G. BALL, *Auxiliary Editor*

CONFERENCE REPORT

MRS. GERALD LEVAN, *President-Elect*

The 11th Annual Conference of State Presidents, Presidents-Elect and National Officers and Chairmen was called to order at 9:45 a.m. in the Gold Coast Room, Drake Hotel, Chicago, on Tuesday, November 16th by Mrs. George Turner, President.

In her opening speech Mrs. Turner stressed the qualifications for leadership in community health work and urged us to make 'Enthusiasm' in what we are doing and 'Knowledge' of Auxiliary activities a habit. 'Reevaluation, special emphasis where needed and an all out effort behind the projects already under development to increase their effectiveness.'

With our National President-Elect, Mrs. Mason Lawson, presiding, the Conference got off to a good start for its three days session. Roll Call was answered by representatives from the forty-eight states, the District of Columbia, Alaska and Hawaii. The Conference afforded us an excellent opportunity to meet and learn to know the National officers and chairmen, the key men of A. M. A. Headquarters, and the Auxiliary leaders in our states, with whom we could discuss our various problems. It was really an educational privilege!

"Leadership In Community Health," the theme of our National President, was the predominant element of the Conference program. The entire program was an all-states-inclusive one with emphasis on Auxiliary preparation for community leadership, auxiliary participation in all community health projects, and what Organized Medicine contributes to community leadership.

Panel Discussions were held on all phases and topics of Auxiliary activities, which, basically, is the same program we have had but with some improvements and new ideas added. Each Panel had a National chairman as moderator and several state presidents (or presidents-elect) as participants. Various topics relative to each panel subject were

taken up by the respective participants, which was an excellent opportunity for us to learn first-hand just what others are doing and how they do it. Our own Auxiliary President, Mrs. Albert Goldstein, served on the Organization Panel and her topic, "How To Develop Interest In Auxiliary Membership," was interesting and delivered in her charming and convincing manner. (You, too, would have been proud of her!) After each panel discussion, there followed a Questions and Answers period which we found most helpful. Then we had a speaker from A. M. A. Headquarters to give us further information on each panel subject.

At one of our luncheons, public relations representatives from three large, well-known industrial corporations in Chicago—Quaker Oats, International Harvester, and Norge Division of Borg-Warner—were our guest speakers and presented a panel on "Auxiliary Service and Community Relations." These speakers were women who have top rating as public relations officers of their respective companies. They put great stress on Understanding, Knowledge, Enthusiasm, Conviction, Contact, and the responsible position the Auxiliary member has in her community. Know what your organization stands for, be well informed on all its aims and objectives, and take your place in community team work. Women hold the balance of power in their hands, if they but realize it. We're in a very strategic position and can sway public opinion any time we wish, for we can talk and get there faster than any other group. Living in the age of modern conveniences for the home, we have more free time and we should be interested enough to give more energy and effort to the auxiliary, to our husband's profession and relieve him of all the community health responsibilities we can.

While the Conference program covered all familiar phases of auxiliary activity, from organization to the mechanics of smooth operation of an auxiliary,

there are some new and improved items on the agenda for 1954-55:

1. Cooperate with the Academy of General Practice project, "A Family Doctor For Every Doctor's Family." This should have high priority on our list. America is losing too many medical men at the height of their careers, and there is a strong feeling that the doctor and his family get only hop-sotch medical care and attention. We are asked to head a campaign in our state to have every physician arrange for services of a family doctor for himself and dependents.

2. Safety—Highway, Home and School. Safety, as a health measure in the community, cannot be too strongly stressed as a part of our auxiliary's active program—a challenge for us on all levels. We are urged to take the lead in helping our community observe all measures intended to reduce, if not eliminate, accidents. It is much more important to save a healthy life than to try to save a diseased life. Medical will never produce a vaccine to prevent accidents, hence it is up to each and everyone of us to do our part toward prevention.

3. Community Health Audits. Learn what various voluntary agencies and local government bureaus offer in health service and whether they meet your community needs; aid your medical society in furthering these programs; observe National Health Week (April, 1955) with a unified health project.

4. Civil Defense. Work with your local medical society, with stepped-up speed, to perfect the emergency medical disaster plan. Get a map of your State and City and mark the Mass Dispersal Escape Routes, showing First Aid and Loading Stations outside the city; keep flashlight and first aid kits in your car and in your home shelter area; have ample supply of food, water, clothing, and some means of heat and light for an emergency; a safely buried drum of gasoline for your car so that you may be able to escape from a disaster area, or help to transport others to a safe spot.

5. Legislation. Since the legislation picture is ever changing, we must be on the alert for bills affecting American medicine. Form Study Groups to familiarize yourself with issues affecting the medical profession. Have accurate information, both the pros and cons, and talk it in and with other groups. Be on the alert for reintroduction in

Congress of the Bricker Amendment, which lost by one vote in the last session; the Reinsurance Bill, which is a compulsory measure that would regiment the medical profession.

6. Support Worthy Causes. Some of which are: "The American Heritage Foundation," whose project is the "Crusade For Freedom," "The American Medical Education Foundation" and "The World Medical Association."*

The W. H. O., the World Health Organization, is in no way connected with the W. M. A. or the A. M. A. It is a branch of the United Nations and represents in the health field the governments of the world.

LOOKING FORWARD

Only too soon will spring with all its attendant activities be upon us. Plan now!

The Future Nurses Convention tentative date is Thursday, March 10, 1955. Delegates from fifty-one Future Nurse Clubs all over the state will attend.

The Annual Meeting of the Woman's Auxiliary to the Medical and Chirurgical Faculty will be held Thursday, April 21st at the Hotel Belvedere. We hope to have Dr. Kenneth MacFarlande of General Motors speak to us. There will be a coronation of the Student Nurse of the State chosen from Nursing Schools all over the State. Candidates qualify as to the best all around nursing student, academically and clinically. A prize of \$100 is offered the winner. Make certain your local Nursing School knows about the contest.

The Annual Ball which Baltimore City Auxiliary plans for the Medical and Chirurgical Faculty will be held on Friday, April 22, 1955, at the Emerson Hotel. Exciting plans for fine entertainment and dancing are now being made. Start thinking about a group for your table. How about sponsoring a "County Table" for your county? The Baltimore City Auxiliary has always been very generous in

* Do NOT confuse the World Medical Association, W. M. A., with the "World Health Organization," W. H. O.! The World Medical Association is the voice of 700,000 practicing physicians representing some 40-odd national medical associations of the world. It is the only international organization with the power to speak for this group before other international bodies on any but strictly scientific subjects. It is your organization and has been working for your interests! This should interest the doctors and us.

sharing the profits of the ball with the State Auxiliary, American Medical Education Foundation, Nurses Program and New Building Fund. Let's all get behind them and help make this 1955 Medical and Chirurgical Faculty Ball the best ever!

The following ladies are serving on the Committee for the Med-Chi Ball: General Chairman, Mrs. J. B. Ballina; Co-Chairmen, Mrs. Thomas C. Web-

ster, Mrs. Max R. English; Decorations, Mrs. John H. Hirschfeld; Entertainment, Mrs. Irving J. Taylor; Flower Girls, Mrs. E. Roderick Shipley; Hostesses, Mrs. Michael J. Dausch; Patrons, Mrs. John B. DeHoff; Program, Mrs. Conrad Acton; Publicity, Mrs. Homer U. Todd, Sr.; Raffle, Mrs. Ross Z. Pierpont; Reservations, Mrs. E. Ellsworth Cook, Jr.; Tickets, Mrs. Edward F. Cotter.

DEFENSE PROPOSES FOUR-YEAR EXTENSION OF REGULAR DRAFT

The AMA Washington Letter, No. 100

The administration wants the regular draft which expires next June 30 extended for another four years. In making this disclosure at a Pentagon press conference, Secretary of Defense Charles Wilson left unanswered for the time being just what are the administration's plans for the doctor draft which also expires in mid-1955, and which is a part of the regular draft law. This issue is scheduled for settlement in the near future. Mr. Wilson said details of the program for long-range, modified reserve training were being worked out, and probably would be included in the President's State of the Union message in January. It is estimated that the regular draft would continue to take about 23,000 young men each month. The reserve program would provide six months training for 50,000 to 100,000 men a year, with an obligation to participate actively in reserve or National Guard units.

The Secretary said Congress likewise would be asked to grant military pay raises averaging from 3 to 5% at an added cost of \$600,000,000 a year. It is proposed to give higher raises to men with certain technical skills and to those who agree to long-term service.

UNION HEALTH, WELFARE FUND HEARINGS END, LEGISLATION POSSIBLE

The AMA Washington Letter, No. 100

An extensive investigation of labor union health and welfare funds aimed at safeguarding benefits for workers was concluded this week by a subcommittee of the House Labor and Public Welfare Committee. A three-day Washington hearing, rounding out earlier sessions in Los Angeles and Detroit, revealed that an administrator of 13 union funds paid \$45,000 in three years to two union officials who helped expand his business. One of these officials also served as board chairman of four funds that appointed the administrator. Other witnesses testified that a Reading (Pa.) casualty company received \$166,000 in premiums over five years from an Atlantic City union, paid out \$54,000 claims, and \$45,000 in commissions to the agent who obtained the business.

Subcommittee Chairman Samuel K. McConnell, Jr. (R., Pa.) said it is possible that the hearings would lead to corrective legislation unless the unions themselves take action to cure abuses and safeguard benefits for rank and file members. The House inquiry followed a suggestion from President Eisenhower that Congress decide whether a law to protect union welfare funds is necessary. These funds are estimated to exceed \$20 billion.

Coming Meetings

SECTION ON DISEASES OF THE CHEST*

JOHN E. MILLER, M.D., *Chairman*

EDMUND G. BEACHAM, M.D., *Secretary*

Wednesday, March 2, 1955, 8:00 p.m.

Faculty Building, 1211 Cathedral Street, Baltimore

Relation of Occupation to Chest Diseases. (Illustrated.) R. R. Sayers, M.D., Senior Medical Supervisor, Occupational Diseases, Baltimore City Health Department

PEDIATRIC SECTION*

JOSEPH M. CORDI, M.D., *Chairman*

SAMUEL S. GLICK, M.D., *Secretary*

Tuesday, March 8, 1955, 8:30 p.m.

Faculty Building, 1211 Cathedral Street, Baltimore

Hereditary Elliptocytosis Associated with Hemolysis. Mary Ellen Avery, M.D., Johns Hopkins Hospital.

A Patient with Bile Retention at Birth. Irving Kramer, M.D., Sinai Hospital.

Afibrinogenemia. Martha E. Mann, M.D., Baltimore City Hospitals.

The Clinical Significance of the Chloride Concentration of Saliva in Studies on Fibrocystic Disease. John Looper, M.D., University Hospital.

This program is given by the Residents.

THE COMMITTEE FOR THE STUDY OF PELVIC CANCER

RICHARD W. TELINDE, M.D., *Chairman*

BEVERLEY C. COMPTON, M.D., *Secretary*

Thursday, March 17, 1955, 5:00 to 6:00 p.m.

Faculty Building, 1211 Cathedral Street, Baltimore

Sponsored by the Maryland Division of the American Cancer Society and the Medical and Chirurgical Faculty.

MATERNAL MORTALITY COMMITTEE

HUNTINGTON WILLIAMS, M.D., *Chairman*

GEORGE H. DAVIS, M.D., *Acting Secretary*

Thursday, March 24, 1955, 4:00 to 5:00 p.m.

Faculty Building, 1211 Cathedral Street, Baltimore

Joint Committee on Maternal Mortality of the Baltimore City Medical Society and the Baltimore City Health Department.

* Section of the Baltimore City Medical Society.

DR. JACK W. KOLSON MEMORIAL LECTURE

SPONSORED BY THE HOUSE STAFF OF SINAI HOSPITAL

Thursday, March 24, 1955, 8:30 p.m.

Hurd Hall, Johns Hopkins Hospital

The Pathogenesis of Atherosclerosis and Current Concepts of Treatment. G. Lyman Duff, M.D., Strathcona Professor of Pathology and Dean of the Medical Faculty, McGill University, Montreal, Canada.

DERMATOLOGY SECTION*

WILLIAM R. BUNDICK, M.D., *Chairman*

STANLEY N. YAFFE, M.D., *Secretary*

The March meeting of the Dermatology Section of the Baltimore City Medical Society has been suspended this year, because of the Atlantic Dermatological Society which will meet in Washington, D. C. at about the same time.

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EISENHOWER RECOMMENDS REINSURANCE BILL TO REPUBLICAN LEADERS

The AMA Washington Letter, No. 102

Reinsurance was one of the pieces of legislation recommended for passage by President Eisenhower when he met with Republican Congressional leaders early this week to discuss domestic legislation. Although information given out by the White House did not indicate in what detail the President described his new reinsurance plan, it is understood the administration's bill will resemble the one defeated last July in the House. One variation is expected to be the pin-pointing of areas in which reinsurance might be of value, such as catastrophic illness, coverage of the aged and the chronically ill, coverage in sparsely settled areas, etc. One suggestion is to limit the bill to catastrophic illness. Last year's bill was designed to encourage health insurance plans to experiment in coverage, but it did not designate the particular areas where experimentation might be of value.

The President's views will be presented to Congress in more detail in his three major speeches in January—his State of the Union talk, the Economic Report and the Budget Message. The first of these, the State of the Union message, he will present to Congress in person on January 6, the day after the session opens.

The administration's plans for an expanded medical care program for military dependents also were outlined the next day to a group of senior Democrats and Republican committee members. This session was confined to "nonpartisan legislation," mostly concerning foreign affairs and defense. Reviewing this legislation were Assistant Secretaries of Defense Carter Burgess and W. J. McNeil, who also described White House plans for other fringe military benefits, for a military pay raise and for a new reserve training program.

*Section of the Baltimore City Medical Society.

JOURNAL SYMBOL CONTEST!

Don't forget to mail your MARYLAND STATE JOURNAL symbol to Mrs. George E. Wells, Jr., 1211 Cathedral Street, Baltimore 1, by April 1, 1955. However, sketches may be sent in earlier.

RAFFLE AT MED-CHI BALL

Watch your mail for information regarding the *Raffle* to be held on Friday, April 22, 1955 at the Med-Chi Faculty Ball

WOMAN'S AUXILIARY PLANS CREATIVE ARTS SHOW

A creative arts show will be held during the Annual Meeting of the Medical and Chirurgical Faculty from Thursday, April 21st through Saturday, April 23rd, 1955. ALL DOCTORS AND THEIR WIVES are invited to exhibit. Paintings, ceramics, furniture, weaving, and photography will be accepted, and must be submitted ready for exhibiting. For example, paintings must be framed and wired for hanging; likewise, photography must be mounted and wired, etc. Two exhibits per person will be accepted in the order of entry until the available space is exhausted.

Entries are to be delivered to the Medical and Chirurgical Faculty Building, 1211 Cathedral Street, Baltimore, on Thursday and Friday, April 14 and 15, between 10:00 a.m. and 3:00 p.m. Exhibits must be removed on Monday, April 25th, between 10:00 a.m. and 4:00 p.m. Hostesses will be in attendance on the days when the show is open. We hope you will exhibit in the Creative Arts Show for this year.

Mail the application printed below to Creative Arts Show, c/o Mrs. Abraham Kremen, Chairman, 2400 Talbot Road, Baltimore 16, Maryland.

Mail this application at once to Creative Arts Show, c/o Mrs. Abraham Kremen, Chairman
2400 Talbot Road (16) (Wi7-0300)

(Please print or type)

Exhibitor _____ Telephone _____

Address _____

Nature of Exhibit _____ Title _____

Size _____ Medium _____